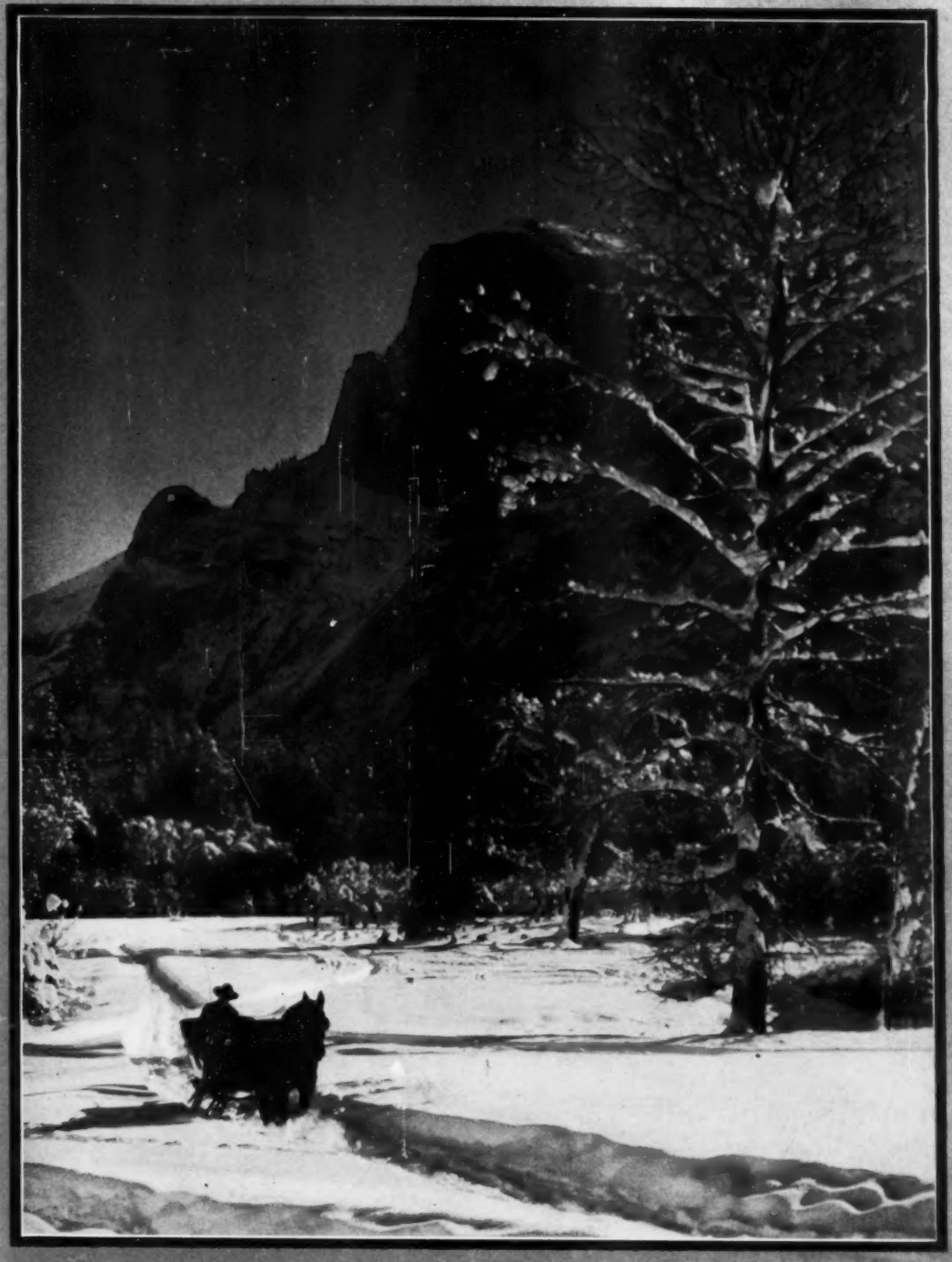
American FORESTS



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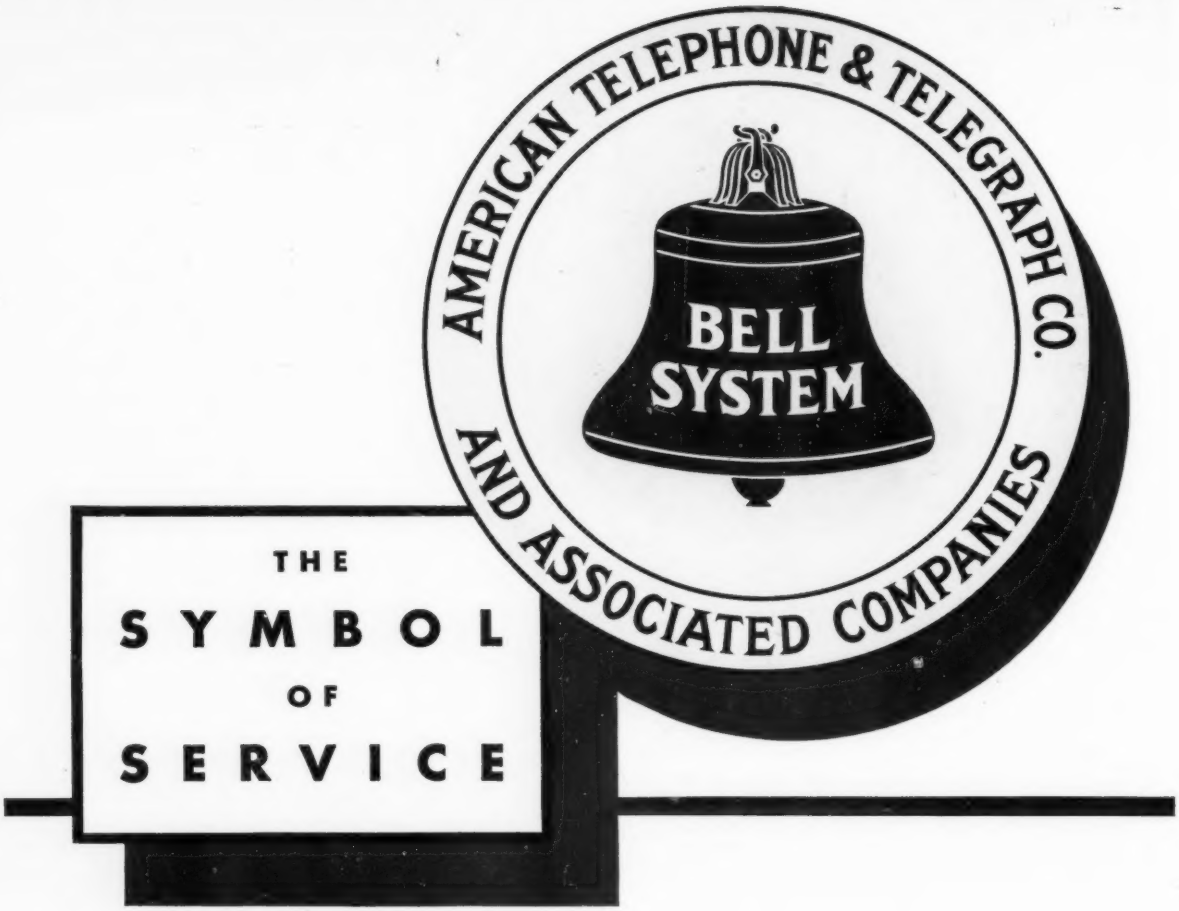

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AMERICAN FORESTS

OVID BUTLER, Editor

L. M. CROMELIN and ERLE KAUFFMAN, Assistant Editors

CONTENTS

JANUARY, 1934 Vol. 40 ◆◆◆ No. 1

THE COVER
"Sleigh Bells in Yosemite"
Photograph by The National Park Service
"THE PATRIOTISM OF PEACE"
By ARTHUR C. RINGLAND 3
THE PRESIDENT'S FORESTS
By RAY F. BOWER 7
READING HISTORY FROM THE DIARY OF THE TREES
By BRUCE BRYAN 10
THE GRIFFITH PARK DISASTER
By GEORGE H. CECIL 15
"IN THE PATH OF THE STORM"
Photograph by T. O. SCHECKELL 16
AWARDS IN NATIONAL PHOTOGRAPHIC COMPETITION 17
PHOTOGRAPHING THE WESTERN HORNED OWL
By ALFRED M. BAILEY *and* R. J. NIEDRACH 18
EDITORIALS—
The New National Park Emergency 21
The C.C.C. Speaks 21
Iowa's Conservation Plan 22
"WHAT THE C.C.C. HAS DONE FOR ME"—
'A Task, A Plan and Freedom'
By JAMES KIDWELL 23
'Wisdom From the Trees'
By GERALD STREET 24
'A Home and Harvest Saved'
By K. EDD TESTON 25
THE LAND PROBLEM IN FLORIDA
By DR. A. STUART CAMPBELL 26
FIELD AND FOREST FOR BOYS AND GIRLS
"Trees In Winter" and "Feeding the Winter Birds"
By JOHN HARVEY FURBAY 28
FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW—
The "DeSoto Oak" 29
BLACK WALNUT (Tree Series) 30
AROUND THE STATES 31
THE ORIGINAL LYNCHING TREE
By HAVILAH BABCOCK 39
FORESTRY IN CONGRESS
By G. H. COLLINGWOOD 40
ASK THE FORESTER 41
AMONG THE CURRENT PUBLICATIONS 42
BOOK REVIEWS 43
"WHO'S WHO" AMONG OUR AUTHORS 48

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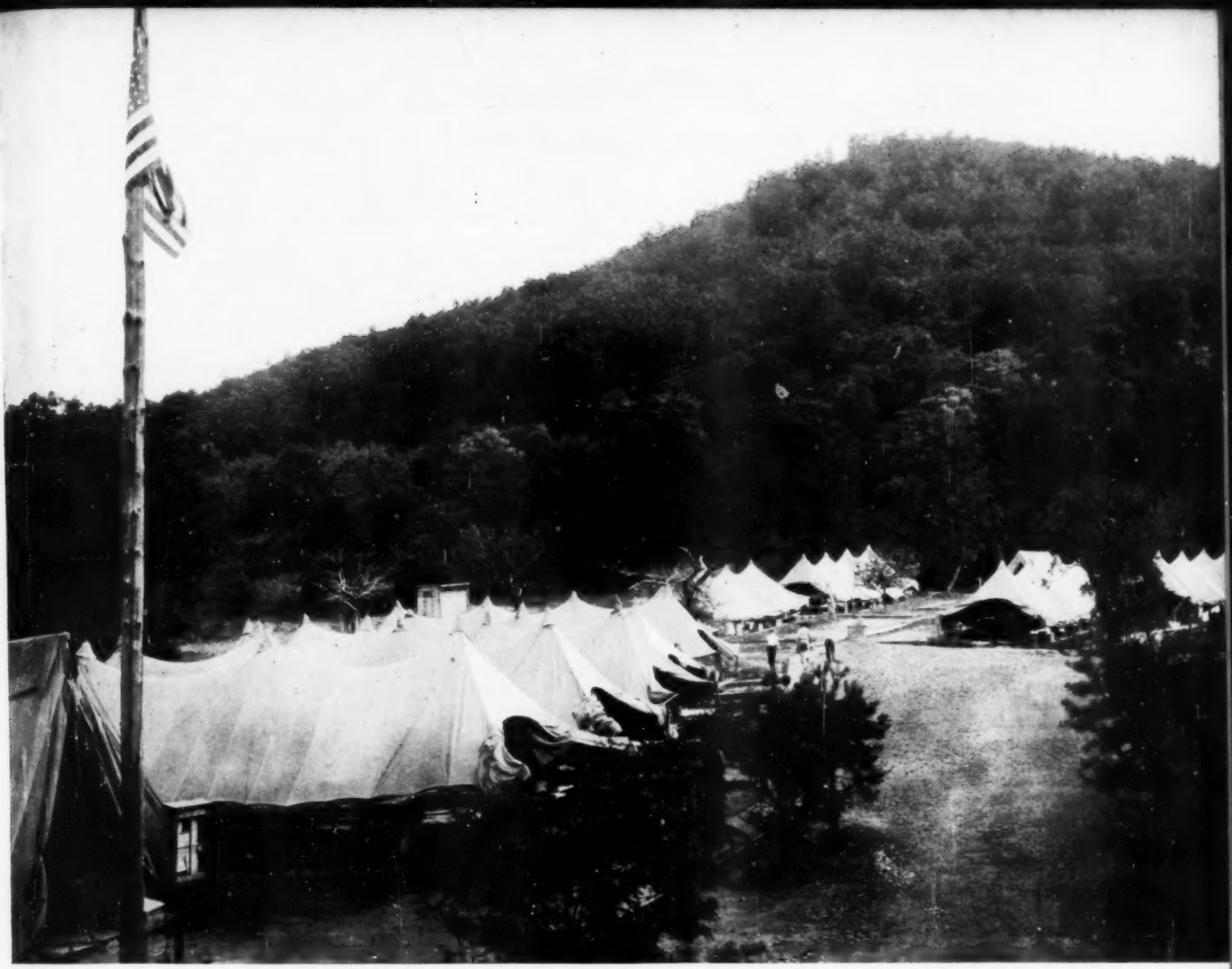
THE FOREST ROAD BUILDERS

The high purpose in establishing the Civilian Conservation Corps was two-fold—to meet the demand for immediate useful employment of public benefit to young men and offer them the opportunity to make real contribution to the conservation and development of natural resources—forests, soils and waters vital to the national welfare.

FIRE LANE CONSTRUCTION TO STOP THE GREAT ENEMY OF THE TREES



"The Civilian Conservation Corps has enrolled the youth of America for public service in conservation work . . . to fight forest fires and floods, to plant forests, to reclaim deserts and swamp lands . . . and there will be more than enough work for such a Corps to do for generations to come . . . it is timely to consider its establishment upon a permanent basis."

"THE PATRIOTISM OF PEACE"

By ARTHUR C. RINGLAND

PRESIDENT ROOSEVELT, "seizing historic opportunities," created the Civilian Conservation Corps some eight months ago at a time when the morale of American youth was at the breaking point. William James, in 1910, pointed the way in his essay on moral equivalents of war. He was followed in 1915 by George H. Maxwell, the conservationist, in his book, "Our National Defense: The Patriotism of Peace." Maxwell outlined at length a plan for the enrollment of youth for public service in conservation work.

James said, "It is but a question of time and of opinion-making men seizing historic opportunities" when the youthful population would be organized to form for a certain number of years a part of the army enlisted against nature. There would be thus preserved for a peace-economy the moral equivalents for the martial ideals and virtues of cohesiveness, surrender of private interest, fidelity, discipline and hardihood, and numerous other goods to the commonwealth would follow. "To coal and iron mines, to freight trains, to fish fleets in December, to dish-washing, clothes-washing, and window-washing, to road-building and tunnel-making, to foundries and stoke-holes, and to the frames of sky-scrapers, would our gilded youths be drafted off according to their choice, to get the childishness knocked out of them, and to come back into society with healthier sympathies and sobered ideas. They would have paid their blood-tax, done their own part in the immemorial human warfare against nature, they would tread the earth more

proudly, the women would value them more highly, they would be better fathers and teachers of the following generations."

Maxwell proposed the enlistment of young men in a national construction corps to labor for their country in constructive service in time of peace; building great works of internal improvement and material development, with exactly the same spirit of patriotic service as in time of war—to fight forest fires and floods, to plant forests, to reclaim deserts and swamp lands. It should show the patriotic spirit with which work in the public service can be done to protect the country from Nature's devastation. It should demonstrate that such work can be done in times of peace with the same energy and enthusiasm that prevail in time of war. There would be more than work enough for such a Corps to do for generations to come. This great inter-related and inter-dependent work of forest and water conservation would necessitate the employment of an ultimate total of more than a million men scattered throughout every State in the Union. The states would willingly extend cooperation, but the initiative must be taken and the basic plans made and furnished by the National Government.

It is interesting to note that Maxwell supplemented his plan for a National Construction Corps with a proposal to establish in the Colorado Basin, the Columbia River Basin, the San Joaquin Valley, the Mississippi Valley and elsewhere, an organization whereby men and their families could settle on the land, support themselves by its products, and engage at the same time in the construction of great public works of conservation. This plan is somewhat similar to the present Administration's policy of establishing subsistence homesteads.

Maxwell pointed out that unemployment will continue so long as there is a great mass of floating labor living from day to day on a wage while it lasts and starving when it stops. No scheme can be devised that will end the miseries caused by unemployment so long as this floating mass of workers is perpetuated. Human genius cannot prevent the ebb and flow of prosperity. Eras of depression are inevitable. When they come thousands will be out of employment. This was written in 1915, and prophet as Maxwell was, he could not have foreseen the extent of the present depression and its far-reaching social implications, particularly in relation to youth.

President Roosevelt's objectives were broadly two-fold when he established the Civilian Conservation Corps. There was the social objective: to give useful immediate employment of public benefit to young men otherwise condemned to enforced idleness at a critical age; to build up their health and morale; and to spread the use of public relief funds through an allotment of a part of the workers' earnings for the benefit of their dependents. The second and ultimate objective was a realistic contribution to the conservation and development of natural resources—forests, soils and waters vital to local and national welfare. Here were two needs, socialogical and economic, each supplementing the other and collectively serving the public welfare. In brief, the President sought at once effective means to develop better citizens for living in a better country.

It will be generally appreciated that the high social purposes of the President cannot be attained for the youth of the nation as a whole within the fleeting two-year period of the authority granted him by Congress. The social and physical handicaps suffered by a disconcerting percentage of our youths are not to be overcome by temporary measures. This is particularly true in consideration of the transition ahead from an individualistic economy to a better planned and more cooperative national economy. How long this transition period will continue is a matter of speculation, but that it will continue sufficiently long to vitally influence the generation of young men now coming to maturity admits no doubt. There is, therefore, no reason to suppose that the social and economic conditions which prompted the President to create the Civilian Conservation Corps in the first place will not continue for a protracted period as a phenomenon of our national life, though, no doubt, in less aggravated form than during these years of general distress.

Just as the social objectives of the Civilian Conservation Corps cannot be adequately attained from a national standpoint through a temporary organization, so, too, must the conservation objectives fall short of their ultimate possibilities. This does not at all discount the great value of the work accomplished; it is simple recognition of the immensity of the physical task ahead—a task that grows as the possibilities are revealed. There must be considered, too, that the capital improvements already constructed will demand a considerable force for proper annual maintenance.

It is timely to consider the establishment of the Civilian Conservation Corps upon a permanent basis. The reasons are impelling. Interpolating the figures of the United States Census for 1930, it is estimated that there are about 7,500,000 young men between the ages of eighteen and twenty-five, the age limitations established for the enrollees of the Civilian Conservation Corps. Of these, certainly not more than twenty per cent, or 1,500,000 are in attendance at school. In the critical age classes between eighteen and twenty alone the Census reports there are 6,815,710 young men and women. Deducting for those in school, or 1,456,784, and assuming an equal division of the sexes, it may be said that nearly 900,000 youths at the age of eighteen, and probably more today are annually thrown upon the labor market, or at least are denied further opportunity for education and must be self-supporting.

These figures are significant, for there is wide acceptance of the statement that there are several million adult workers —the figure of 3,500,000 is generally used—who cannot be re-absorbed into industry as now constructed and restored to their former jobs, even when normal activities are resumed. This condition is attributed to the extraordinary advance of science and machine technique resulting in a continuing increase in the factor of occupational obsolescence. Now, unhappily, upon this great body of floating and surplus labor falls the annual impact of fresh accretions from the ranks of young men seeking employment under highly competitive conditions.

It seems obvious that until this body of surplus older workers can be absorbed into new and gainful occupations —a slow process at the best—the annual graduation of great numbers of young men into the ranks of workers will aggravate and prolong the difficulties of both classes. The young workers are forced to take "a job," if they can get it, rather than "the job."

There, too, must be considered the fact that our numerous criminals are largely recruited from young men in their early twenties, and even younger. Enforced idleness will certainly swell their ranks. Yet save for the inherently vicious it is well known that proper environment and acceptance of responsibility are the surest safe-guards for the development of young men into useful citizens. It cannot be gainsaid that every young man should either be in school or usefully employed. The extent to which the opportunity for one or the other is denied measures the extent of our failure to meet adequately the shameful condition of crime which prevails throughout the country.

Crime could be immeasurably reduced if the present fruitful field for young recruits—the field of idleness—was eliminated as it could be and should be. Why is it that Mussolini has been so successful in stamping out crime in Italy? Only a few years ago it was unsafe for the stranger to travel in a number of sections. The answer is that young men must work. And they do. If there are no opportunities in private employ they are given jobs on useful public works. In Bulgaria young men are conscripted for public labor service.

Reference has been made to the fact that not more than twenty per cent of young men over the age of eighteen normally enjoy the privileges of further education. The years of economic depression have now caused the interruption of the education of many, and normal careers have been abruptly checked. Most of the camps of the Civilian Conservation Corps reveal large numbers of men eager to improve the opportunity for advancement; in some camps there are illiterates.

THE OLD MAKES WAY FOR THE NEW

Where Fire has swept the forest—great dead trees are taken out, that the lumber may be salvaged and the young, new forest planted to reclaim the unfruitful land and clothe it once again with green.

In many of the camps an educational program is under way; it may be the three R's, or literature and higher mathematics, for men of all grades of schooling, even college training are represented. The work is wholly voluntary on the part of instructors, drawn from the Army and Forestry supervisory personnel and frequently from the ranks of the enrollees. This academic work is supplemented by practical talks to develop understanding of the conservation work undertaken by the Corps. The course, too, of the day's labor affords opportunity for development of trained clerical expertness, skilled trades and useful mechanical knowledge—the care and upkeep of the light and water plants, the work of the blacksmith shop, and conditioning of the motor equipment. Apprenticeships are also served with the technical personnel in land surveying, mapping, and forms of engineering and forestry technique in connection with the work lay-outs of each camp. Aside from these forms of academic, technical and practical knowledge, leisure time in some of the camps has inspired the organization of orchestras and dramatics. The music may be confined to jazz and the art of the theater to minstrels, but their obvious value to camp morale will be at once appreciated.

When so much has been done in a voluntary way and under the obvious handicaps inherent in a temporary organization, and with inadequate facilities and equipment, it is inspiring to reflect upon the educational possibilities that can be developed by a permanent organization under expert direction. While much would

be accomplished in turning out clean young men of sound physique, yet it would be fatuous to merely graduate more husky manual laborers to take their precarious chance on a market already overburdened with unskilled workers. Not only should the elements of schooling be afforded to those who need it, and advanced work provided for the ambitious, but every opportunity for practical vocational training and demonstration should be sought and capitalized. This is a practical objective that must be kept in view if educational activities are to be seriously and productively promoted in the camps of the Civilian Conservation Corps.

The second and ultimate objective sought by President Roosevelt to afford healthful and useful employment on works of public benefit in the conservation of natural resources is admirably met by the Civilian Conservation Corps. The field for needful public works of conservation of forests, soils and waters is found in every State in the Union. There are the one hundred and sixty National Forests, embracing approximately one hundred and sixty million acres, under the administration of the United States Forest Service of the Department of Agriculture; the National Parks, Indian Reservations and the unreserved public domain under the administration of the Department of the Interior; State Forests and Parks administered by State departments of conservation; and finally the extensive commercially valuable acreage of private forest lands, notably in the South and the West. There must, likewise, be included the necessary works of soil stabilization, erosion and flood control within the vast tributary watersheds of the Colorado River Basin, the Columbia River Basin, the Mississippi Valley and other drainage areas of interstate importance.

Let the interested layman glance at a map of the United States recently prepared and published by the Corps of Engineers, U. S. Army, and showing the location of the camps at present established for the work of the Civilian Conservation Corps. It is unlike any other map save those which showed the various theatres of action in Europe during the World War. Here "the front" is in every State. Masses of small red circles flank the Pacific slopes of the Cascades and the Sierras from the Canadian boundary to the Mexican border; another attenuated mass follows the Continental Divide of the Rockies, with outlying circles in the Great Basin, in Arizona and New Mexico; the great and vast Mississippi Valley is dotted from the Lake of the Woods on the International Line almost to the suburbs of New Orleans; and in the East the red circles follow the whole Appalachian Range from Northern Maine to Northern Georgia, fanning out all over the coastal plains of the Southern States. There are 1,500 red circles each representing a camp site occupied by 200 men! This is realism! This is action!

Here is public work and service for years to come and of vital importance to community and national welfare; work in many of its aspects which cannot be adequately and timely met by the responsible Federal and State agencies within the compass of their normal resources. A coordinated national program and plan of land conservation and utilization is needed, built upon community and regional needs and integrated in concept and execution. There should be set-up, in effect, a series of Tennessee Valley projects through, if necessary, the constitutional provision for inter-state compacts. Within these projects all conservation work and agencies of execution could be coordinated to the definite purpose of dedicating the land, the soil and the waters, to serve the highest purpose.

This is precisely the basis of the great land utilization plan now underway in Italy, including the whole kingdom in a series of coordinated projects and providing for the conservation, reclamation and utilization of the Nation's soil and water resources. It is a comprehensive and far-reaching enterprise of social usefulness designed to revitalize the country as a whole. The measures undertaken are designed to increase employment, expand the purchasing power and the national income; settle on the land surplus industrial and migratory agricultural labor; intensify and stabilize the production of agricultural, forage and forest crops on appropriate soils, and withdraw from cultivation or pasturage inappropriate soils; utilize water resources for electric power, irrigation and navigation; prevent soil erosion and floods; rehabilitate and modernize rural centers; promote health; and through example provide education in improved methods of farming. It is significant to note that in order to secure the most effective collaboration and coordination, particularly between engineering, agriculture and forestry, all departmental services in any way connected with the Italian national land plan have been placed under single direction.

President Roosevelt has opened the way for forest conservation on private lands through his personal insistence that if the great lumber industry is to profit by the provisions of the National Recovery Act the industry must recognize the right of the public to share in the extraordinary privileges and benefits bestowed by legal sanction. This right of the public has been simply stated in the provisions of the Lumber Industry Code wherein the applicant industries undertake, in cooperation with public and other agencies, to carry out such practicable measures as may be necessary in respect of conservation and sustained production of forest resources.

This is a veritable revolution in the development of a forest economy in this country. It is an adoption of a fundamental policy practised for generations in the forested countries of Europe wherein private enterprise in cooperation with the public has stabilized the production of forest crops. The fruition of this policy in our own country will mean the elimination of fugitive "cut-out and get-out" forest enterprises, and the establishment and development of permanent communities furnishing stable employment for two million men. Public agencies have pledged their support and cooperation to the lumber industry in the fulfillment of the obligations undertaken by the Code. This public support and cooperation can, in great measure, be implemented by the labors of the Civilian Conservation Corps.

Wholly aside from the economic and social benefits that are accruing to the nation from the present operation of the Civilian Conservation Corps through relief of unemployment, benefit to families, business interests and the conservation of vital natural resources, the human factor and the social values to the individual must be appraised. The men are taught the value of team-play and how to live with the other fellow through orderliness, cleanliness and good manners. This is discipline at its best. And on the job they develop self-reliance, resourcefulness, confidence, courage and skill. Collectively the Army and forestry agencies are making their most valuable contribution. They are imbuing these young men with ideals of social responsibility to themselves, to others, to their community and their country. The crisis which engages the whole nation has taught, if nothing else, the necessity to live and work together for the common welfare. The Civilian Conservation Corps is learning this and its graduates will be prepared to take their place in the new world ahead.

Sometimes the question is asked if the country can afford the expense of the Civilian Conservation Corps. As James points out war taxes are the only ones men never hesitate to pay. Men without a murmur lay down their persons and their wealth if by so doing (*Continuing on page* 47)

A woodland trail in the President's forest, bordering the Hudson River. This is a beautiful forest of mixed hardwoods and hemlock, with tulip poplar—a favorite with the President—predominating.

THE PRESIDENT'S FORESTS

By RAY F. BOWER

FRANKLIN D. ROOSEVELT, as Governor of New York, showed a keen interest in forestry. Under his regime epoch-making progress was made in reforestation and conservation by the State. As President of the United States since March 4 last he has done more for the advancement of forestry throughout the country than any President since his predecessor and kin, Theodore Roosevelt, stayed up all night and created National Forests from the millions of acres of forested public domain in the West. From doubters comes the question, "Are these interests genuine? Are they not inspired by political considerations?" The answer is best found by a personal visit to the President's Hyde Park home.

Here one finds a large farm, more than 1,000 acres in all. Agriculture in the truest sense of the word is practiced, and only lands well suited to cultivation or pasture are so used. The rest of the farm is devoted to trees, a large acreage of native woodlands. Along the slopes dropping off to the magnificent Hudson one finds a beautiful forest of mixed hardwoods and hemlock. Tulip poplar is conspicuous in this mixture. There are many beautiful specimens. It is easy to see why the President is so fond of this species. Red oak and white ash are also common.

This beautiful forest is maintained not for beauty only. It is made to contribute to its own support. Only a few years ago a well planned thinning was carried out, trees from which were manufactured into cross ties and sold to the nearby New York Central Railroad. Winding and twisting around the numerous woods roads in this lower woodland one suddenly comes upon two fine plantations, one of white pine and one of red pine. They occupy what was once a small cleared field. A casual count of whorls establishes their age at somewhere around twenty years. They indicate an early and sustained interest in forestry, for the trees have already been pruned of their lower dead branches so that knot free, high quality lumber may be produced. Some visitors may be surprised to find these dead branches on the ground just as they fell from the tree. An inquiry gives a clearer insight into the President's forestry views. It costs money to haul out and burn pruned limbs. They will decay in five to eight years lying scattered on the ground as they fall from the saw. They will add humus and some nutrients to the soils and with careful protection the fire hazard is very low. Forestry may be a hobby but with President Roosevelt it must, above all, be a business proposition.

A drainage ditch in the old "Tamarack Swamp," where a most interesting experiment in planting is under way. Note the unusual depth of the humus layer—almost comparable to the peat bogs of Ireland.

Along the road leading out of the river woodlot the visitor finds a small but exceedingly fine stand of planted tulip poplar occupying a vacant corner—"eighteen years old" one is informed. The dead side branches are well pruned, but in the case of this species the pruning has all been natural. Some trees will easily measure more than forty feet in height and six to seven inches in diameter.

A journey by automobile takes one through an extensive native woodland of mixed oak, ash, hemlock and some white pine. It is a second-growth forest of rather good quality. Operations have already been started in parts of this area, the product being largely fuelwood for consumption and sale. These operations have as their aim the improvement of the character and quality of the forest, and financial return. They are carried on so as not to leave a scar on the face of nature, and they are very unobtrusive and inconspicuous.

Proceeding on through this large woodland, one suddenly comes out again on farm land, but nestled close to the woods and occupying a steep little knoll is a small planting of Norway spruce. The trees are only three feet apart each way. It is a Christmas tree planting. The site is not particularly favorable for spruce and the growth is slow but these factors have produced dense, bushy trees which should bring a premium on the Christmas tree market.

Beyond the Christmas tree plantation and along both sides of the road from Poughkeepsie to East Park are centered the President's more recent forest activities. Several old fields, some formerly occupied by grey birch, are devoted to experimental and demonstration plantings, which are carried on in cooperation with the New York State College of Forestry at Syracuse University. They were first started in 1930. On either side of the road there is a fine stand of red pine established the first year. Across a small side road are smaller plots of several different species. Some of them are strangers in this climate. Here are European larch and Scotch pine in mixture. Both are exotics although not untried in New York. To the south is a small plot of Dahurian larch. It is one of the Asiatic cousins of the European species and native in Korea. The growth of this Asiatic tree is astounding. Although established only four years ago, trees are to be seen more than twelve feet high. Undoubtedly this experimental area will contribute knowledge of interest and value to the forestry profession.

Across a stone wall is a larger plot of western yellow

A general view of the "Tamarack Swamp" after clearing and draining. Planted with different species, two growing seasons point to decided success for the experiment and give promise that the old "Tamarack Swamp" may once more yield a real timber crop.

pine that seems to be hardy but is growing rather slowly. Beyond that are small plots of Norway, white and sitka spruce. Norway spruce borrowed from the European forests has been extensively tried in this country and the result is quite certain. White spruce is a native species in the northern part of the State and has been brought slightly south of its native range. It will likely succeed. But sitka spruce from the fog belt of the British Columbia coast is a newcomer in the east. The forester shakes his head and says, "Not a chance; too hot and dry." Yet after four years President Roosevelt can assert that it is alive and healthy and has actually made a better growth than either white or Norway spruce. South through what was Hudson Valley? Results are not yet indicated. And the last pine group, Scotch pine, has already been extensively tried in this country. In fact, some forest authorities have expressed rather emphatic derogatory opinions about this European timber species as it grows in America. But this Scotch pine is of most noble origin. Its pedigree is known. The parent trees are members of an excellent plantation in Germany and the grandparents were part of a virgin timber stand of unusual quality in that same country. Perhaps this offspring will prove worthy of the family name.

And now a short walk down a gravel road takes the visitor to the most extensive and interesting experiment of

One of the older red pine plantations which testify to the President's long-time interest in the practice of forestry. These pines are about twenty years old, have been side-pruned to produce knot-free, high quality lumber and the dead branches left on the ground. It is not only expensive to haul out and burn pruned branches but in their decay they will furnish valuable soil nutrients and the President delights in his forests not only for their beauty, but as a demonstration of sound business practice as well.

once an orchard one finds other interesting tree species, each of which is growing in a small group by itself. Douglas fir, the great timber tree of Oregon and Washington, is being tested. Japanese red pine, another Asiatic species, is growing here, but it does not show as much promise as its near countryman, the Dahurian larch. Next are four different species of pines,—Jack pine, red pine, Corsican pine and Scotch pine. The first two are native species in the State and there is little question as to their success. Corsican pine represents a decided experiment. Native to the warm climates of southern Europe it has proven to be a very rapid grower in certain remote sections of the northern United States. What will it do in the lower all,—an experiment conceived entirely by Mr. Roosevelt and entered into by foresters with a great deal of skepticism. To the right of the road is a soft maple swamp of perhaps twenty acres. An old resident furnishes an interesting history of the swamp. It was once known as the "Tamarack Swamp" but was cleared, drained and cultivated. The gravel road which was later constructed along the east side of it shut off the drainage and soft maple seeded in, and in the course of years made a young forest of rather worthless wood. In 1931, Mr. Roosevelt conceived the idea of again clearing the swamp, opening one of the drainage ditches and planting the whole area with valuable tree species. Foresters (*Continuing on page* 46)

THE "MISSING LINK" IN PREHISTORIC AMERICAN HISTORY

Beam HH39, found at Showlow, Arizona, which joined the ancient tree ring chronology with the modern one and provided a living calendar whereby ancient Puebloan civilization may be dated to the year.

READING HISTORY FROM THE DIARY OF THE TREES

By BRUCE BRYAN

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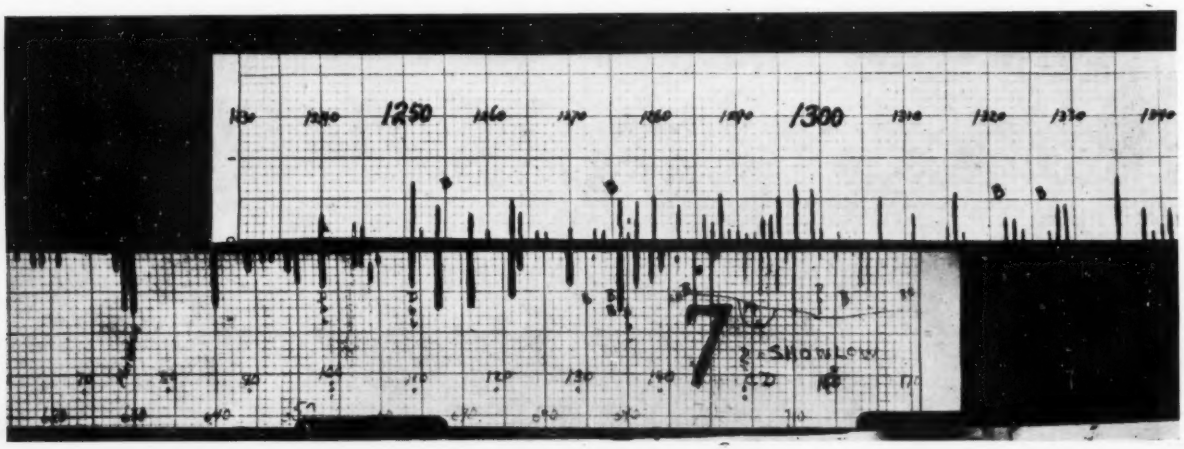
ONE OF the most amazing scientific achievements of recent years was the discovery and working out of what has come to be known as the Tree Ring Calendar. Approached at first as a useful and desirable means of studying climatic conditions of the past in an endeavor to provide some reasonable method of forecasting those of the future, this research into the indelible records of the Arizona pines led into a most unexpected field. Its far-reaching results filled the scientific world with enthusiastic astonishment.

For many decades artists, tourists, and scientists have visited the strange ruins of a prehistoric people in the southwestern part of the United States, and have been moved to admiration and sometimes wonder by the evident accomplishments of this ancient race. Particularly have the well-known cliff dwellings drawn thousands of visitors from all parts of the world and excited equally as many conjectures as to their age and the antiquity of the human beings who built them. They aroused a similar train of thought in the earliest white men who viewed them, the intrepid Spanish conquistadores who invaded the Southwest in the 16th century. Even at that time the builders of the cliff dwellings and many other stone and adobe villages crumbling to ruin in canyons and deserts were for the most part a vanished and extinct race.

The few surviving villages, known as pueblos because of



WHERE TREE RINGS TELL THE SAME TALE

Tree ring sequences, as derived from ancient roof beams and other timbers found in Pueblo ruins, are reduced to skeleton charts such as the above for convenience in study. The upper chart is that of the missing link, Beam HH39, as compared to an older specimen, showing where the principal drouth years coincide. The long black lines represent years of severe drouth; the shorter ones less severe drouth. Years of plenty are omitted from the chart.

their terraced, community-like style of architecture, interested the Spaniards only perfunctorily. The goal of the conquistadores was the fabled Seven Cities of Cibola, supposed to contain untold treasures of gold. But not realizing that the tales the Indians told of Cibola were wholly imaginative, they paid little heed to the pueblos other than to enslave the natives as their guides and laborers. The marvel of an aboriginal architecture, that was by then falling into decadence, and the artistry of the primitive ceramics, which was itself declining, had little appeal for the seekers of Eldorado.

WUPATKI PUEBLO RUIN YIELDS ITS RECORD

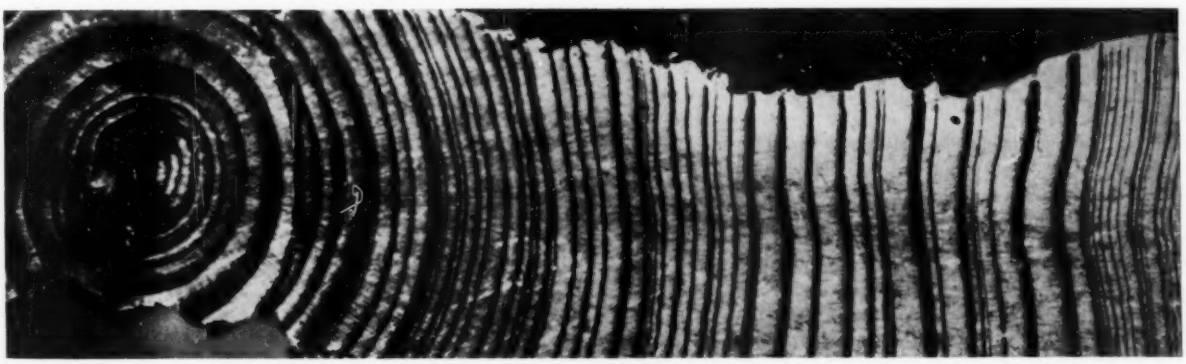
Showing how archaeologists extract a core from a beam too big to remove in its entirety, or where a timber is still in use in an occupied Pueblo. The core is extracted when it is impracticable to cut a cross-section of a log.

Within the past fifty years, however, men of learning have come to appreciate the ancient Puebloans as a remarkable and singularly advanced people who lived in an inhospitable environment and despite their many handicaps developed an outstanding culture. Civilization would be an appropriate term, except for the fact that these earliest Americans did not evolve a written language. But the enormous communal dwellings they erected, the preparations they took for defense against their hereditary nomadic enemies, their ability to farm successfully an arid region, and their natural artistry in the making of pottery have awakened archaeologists to the importance of this people in history.

American archaeology became a science in itself, and the study of the Puebloan cultures a specialized branch. Classical archaeologists, those scholars who concern themselves with the antiquities of the Old World, have scoffed at the students of prehistory in this country. Interesting in a way, they would admit, but after all only a study of a very primitive race that lived in mud houses and made a few baskets and pots. And, worst of all, there was nothing by which the age of their remains might be determined, as could be done with the excavations in Europe, in Mesopotamia, and in Egypt.

For many years the scientists who have spent their lives delving into the crumbling ruins of the prehistoric Southwest have longed for some criterion by which to date them. An approximate chronology was worked out, full of inaccuracies, from a study of the stratification of the tons of potsherds and the few complete bowls found in every abandoned old dwelling place. But after all this system supplied little more than a time comparison, and served to link contemporaneous villages and establish which pueblos were older or later than others. Nothing was known of the exact years in history attributable to any Puebloan village before the coming of the Spaniards.

Customs of burial were compared, decorations of pottery, and styles of architecture observed in the six or seven different cultures comprising the general Puebloan civilization. And not one of the archaeologists engaged in this research work in the pueblo area realized that in practically every ancient ruin lay an open book of facts regarding time if only he knew how to read it. The floors and walls of the terraced buildings erected by these early Indians were of adobe and stone. But the roofs were formed by a cross-



CROSS SECTION OF A DOUGLAS FIR BEAM FROM BETATAKIN RUIN

This log, which began its career in 1073 and was felled in 1260 A. D., tied the 586 years of the prehistoric chronology together. Betatakin is a great Cliff Dwelling in the canyon country of northeastern Arizona.

hatching of poles and branches, resting on heavier rafters that were in turn supported by huge beams set upright in the floors. This thatched roof was then covered with a layer of mud and stone.

But even as they studied the plan and formation of these support beams and rafters it apparently never occurred to the archaeologists that here before them lay a veritable calendar containing all the important dates associated with the history of the village and those who built and dwelt in it. If they were interested in anything beyond the fashion in which the supporting beams and cross rafters were laid, and the wood of which they were made, it was doubtless in determining from where they originally came. Much of the region inhabited by the pueblo tribes was plentiful in pinon, spruce, cottonwood, cedar, Douglas fir, or the small pines of Arizona and New Mexico. But some villages were situated in rocky canyons or sandy deserts so remote from trees large enough to provide the huge roof-supporting beams necessary that the question of obtaining such timbers was a problem of considerable importance.

The site of a prehistoric Puebloan village was primarily dependent on an unfailing supply of water. The acquisition of other necessities might occasion some travel far afield, but the life-giving fluid had to be close at hand. One of these ancient settlements was Pueblo Bonito, the ruins of which, located in northwestern New Mexico, are the most imposing in North America. Representative of the classical culture of Puebloan civilization, its tottering walls stand in the bleak Chaco Canyon where today there is water to be found during part of the year only. Failure of water supply is doubtless the reason this settlement was abandoned long before the discovery of America.

Even in decay Pueblo Bonito, a vast D-shaped communal edifice originally containing eight hundred rooms, stands four stories high in its outer walls. It required quite a quantity of massive beams to hold up that number of floors, and it is interesting to note that the nearest forest with trees of a size capable of yielding such huge timbers is at least fifty miles distant. During its various stages of construction and periodic repair, it is more than likely that the required logs were brought in by regular expeditions of Indians who of necessity traveled on foot over many miles of rough country. And yet we read with astonishment of the accomplishment of the Egyptian slaves who dragged across the sands those great stone blocks that went into the erection of the pyramids!

Little did the excavators who viewed the huge logs in Southwestern ruins dream that in each one dragged forth and cast aside they were ignoring a written record of facts. Indeed, in regions like the Chaco Canyon where wood was scarce, many an archaeologist has warmed himself before his tent at night with a fire fed by these ancient timbers. Thus much of the record was unwittingly destroyed before its value was appreciated. While thoroughly respecting the age of the roof beams and rafters found in old pueblos, the scientists considered them of no value unless some curious design was carved or painted on them. Now and then an odd piece was saved merely because one of its ends showed the dull smashing marks of an ancient stone ax.

It remained for a man engaged in an utterly different branch of science to reveal the pages of early American history recorded in such dried and decaying bits of wood. Professor Andrew Ellicott Douglass, an astronomer in the University of Arizona, at Tucson, not only pointed out the condensed historical data contained in most of these aged timbers, but also supplied the key that enabled modern students to transcribe it. As a result of his discovery and subsequent research, all that an archaeologist needs to fit his particular excavation into its proper niche in time is a single beam from the roof, or even a bit of charcoal, taken from the pueblo in which he is interested. It has been found that charcoal often preserves the telltale annual growth rings much better than an aged piece of wood which too frequently decays and blurs them.

As the naturalist is well aware, each tree puts on a new layer of wood and bark every year of its existence, a ring of growth that preserves indelibly the record of its natural history. This extra layer is not confined to the trunk alone, but is assumed by all the branches and twigs. If all these rings were the same in width and general appearance they would reveal little more than the age of a tree, determined by the simple expedient of adding them up from the core outward, counting the core as number one of the series. But Dr. Douglass has demonstrated that trees are living things which enter and keep in their diaries all the adventures of their lives. The ravages of insects, the scarification of a stroke of lightning, the scorching of a forest fire, all make a very obvious impression on the wood and are duly noted down in the sequence of rings.

A tree is chiefly dependent on water and sunlight, and when plenty of each is to be had its development is indicated by a large, healthy looking ring. In the lean years of drouth a tree's growth is noticeably hindered, with the result that its rings are small and parched. It is in the accumulated layers of what he has come to call the "talkative pines" that Dr. Douglass reads an accurate and undeviating account of the lean years of famine and the fat years of plentiful rainfall throughout the semi-arid Southwestern states. And inasmuch as the peculiarities of climate affect a vast stretch of territory, the same significant record

Puebloan culture has been divided into five periods of development, which have been largely dated by means of the Tree Ring Calendar.

PUEBLO I—First stage, during which cranial deformation was practiced, vessel neck corrugation introduced, and villages composed of rectangular living rooms of true masonry developed. Approximately from year 1 to 6th century, A. D.

PUEBLO II—Stage marked by widespread geographic extension of life in small villages; pottery corrugation often of elaborate technique, extending over whole surface of vessel. 6th century to 900 A. D.

PUEBLO III—The Great Period of Puebloan development; stage of large communities, great development of the arts, and growth of intensive local specialization, 900 to 1300 A. D.

PUEBLO IV—The Proto-Historic period; stage characterized by contraction of area occupied; by gradual disappearance of corrugated cooking wares, and in general by decline from preceding cultural peak. 1350 to 1700 A. D.

PUEBLO V—The Historic period; period after the invasion of the Spanish, marked by rapid degeneration of culture and arts. From 1600 to 1700 up to present day.

There were two stages of earlier people known as the Basket Makers in the Southwest before the time of the later Puebloans, but so far no method has been found to date these more primitive inhabitants who disappeared after the coming of the Pueblo tribes.

is to be found in other trees hundreds of miles away, both older and younger, that were growing at an identical season.

When it was seen how closely the rings of trees of all ages in widely scattered forests corroborated each other in telling the tale of a certain season of extended drouth, it was but a step to ascertain the exact years in which this dry period occurred. This was done by simply counting back from the outer ring of a growing tree to those thinner ones laid up at the time of famine. This was the first practical use of the tree ring calendar, but even then it was not considered as such and its possibilities had occurred to no one.

The eventual development of the system for dating prehistoric dwellings by the use of tree rings was, curiously enough, an indirect result of an entirely different field of scientific research. As has been mentioned, Dr. Douglass was an astronomer. His specialty was the study of sun-spots. Such solar phenomena are known to be periodical in occurrence and to exercise a direct influence on terrestrial climatological conditions. They are most in evidence at intervals of eleven years, and as their influence on earthly weather manifestations can be traced, and the weather in turn leaves its imprint on the trees, the eminent astronomer focused his attention on the study of these arboreal registers.

Though the relationship between tree rings and the appearance of sun-spots seemed to be clear, at first a puzzling phenomenon almost convinced the Professor he was on the wrong track, and nearly led him to abandon his research into the Arizona pines. Regularly recurring sun-spot periods were carefully recorded over a space of 500 years by the rings he studied, but for the interval from 1650 to 1725, a gap of seventy-five years, they gave absolutely no evidence of the expected climatic changes induced by the solar disturbances.

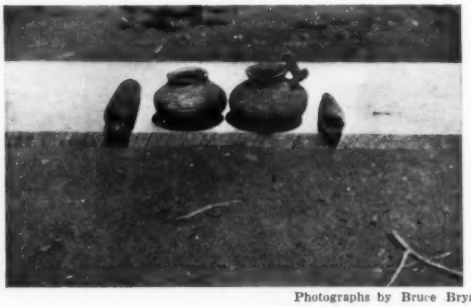
Just as he was on the verge of giving up the field of tree ring examination, and thereby averting the tremendous discovery that was to mean so much to American archaeology, Dr. Douglass received a communication of utmost importance. Dr. E. Walter Maunder, an English astronomer who was also engaged in sun-spot research, but who has since died, wrote of the surprising fact that he had discovered there were no sun-spots between 1645 and 1715. Unaware of the American scientist's findings in the record of the trees, he added the remark that if the annual rings did not disclose this discrepancy in an otherwise regular solar recurrence he must be working on an erroneous hypothesis.

This letter proved to Dr. Douglass that the trees were not at fault and that his line of reasoning was correct in every detail. But for some time he did not concern himself with the possibility of dating the ancient Indian buildings out of which beams and rafters of pine were continually being removed. To him trees were Nature's rain gauges, and at first he worked only with the rings of living pines. No living tree in the area inhabited by the

PUEBLO BONITO, THE LARGEST ANTIQUITY IN NORTH AMERICA

In addition to being the classical example of prehistoric Puebloan culture, it is the oldest definitely dated ruin in the Southwest. It lies in the Chaco Canyon in northwestern New Mexico, and belongs to the San Juan cultural division. It was America's first "apartment house," containing at least 800 rooms, and was under construction as early as the 9th century A. D. Today it is part of the Chaco Canyon National Monument.

Puebloans is more than a few hundred years old, and most of the ancient ruins from which dried logs are taken were abandoned and crumbling centuries before the first white men appeared in America. From a comparison of the rings of hundreds of trees Dr. Douglass evolved a history of drouth and plenty in the plateau country of Arizona for a period of 1,200 years. Years such as 1632, 1379, 1067, and 840, for instance, as shown by the mute records of the pines, were seasons of excessive water shortage. As the number of rings, corresponding to years, was carried back into the past, older trees were sought out. The dry years, as they were the most conspicuous, were the key rings by which trees of different but merging periods were fitted into a continuous sequence of time.



Photographs by Bruce Bryan

Left—Corrugated pottery of the Mimbres area in southwestern New Mexico. On each side is a sandstone pipe, or "cloud blower." From Galaz Ruin, New Mexico.

Right—Charred roof-support beams set in adobe floors of Galaz Ruin, New Mexico. Showing how datable wood is originally found, after fallen wall material has been removed.

Living in a region as prolific in antiquities as is the State of Arizona, and where everyone is interested in digging up the remains of the "vanished people," Dr. Douglass quickly realized that in the ruins of the old pueblos was material to aid in pushing this climatic chart even farther back across the centuries. The rings in prehistoric roof beams were found to be quite as readable as those of living trees. And in addition the year of cutting could be told, corresponding with the outermost, or next following, layer if the specimen were complete.

It had often occurred to the astronomer, as he worked out his study of the effect of climatic changes on trees, that by means of the tree rings he could discover something definite as to the approximate ages of some of the better known pueblo ruins. It had long been suspected by archaeologists, from a matured consideration of the architecture and material remains, that Aztec and Pueblo Bonito, two of the largest Indian ruins in northwestern New Mexico, were more or less contemporaneous. By use of his tree ring system, applied to specimens of wood removed from these two sites, the Professor learned that Pueblo Bonito was perhaps fifty years older than Aztec, in its major building time.

When Neil Judd, who excavated Pueblo Bonito for the National Geographic Society, learned of the method by which Dr. Douglass ascertained the relative ages of the two ruins, he expressed the belief that the work could be developed to the point where they could be dated to the year if only enough beams could be found. Owing to Mr. Judd's interest, the National Geographic Society sent three successive expeditions into the field to seek out these age-old timbers in the known prehistoric ruins of the Southwest.

Vastly intrigued over this new vista opened up by his researches, Dr. Douglass himself accompanied some of the field parties. As fast as the material was found and brought in it was examined. By the middle of 1927 it was apparent to all that a new chronology had been discovered, and American archaeologists hailed it as the greatest achievement ever made in their field. It was comparable in many ways to the famous Rosetta Stone of Egypt which provided the key to the long meaningless hieroglyphic inscriptions. But this was little more than a beginning. The whole knotty problem was far from solved. Many specimens of dried or mouldered wood were unearthed from the fallen pueblos, including a variety of species. It was borne in upon the scientists that only three types of wood were actually datable. These were Douglas fir, pinon, and yellow pine, all of which are much in evidence in the wooded sections of the Puebloan area. Cottonwood, scrub oak, cedar, and the like were unreliable if not useless for the purpose. Dr. Douglass reports, however, that it is possible juniper (cedar) will be developed into datable wood. This should eventually provide a means of dating the mysterious Mimbres Valley ruins in southwestern New Mexico.

Typical Mimbres burial, showing flexed posture of body and artificially deformed skull. The rocks were on top of the skeleton. From Galaz Ruin, Mimbres Valley, New Mexico.

By matching the rings of the ancient beams with the corresponding ones in his tree ring calendar, Dr. Douglass developed a chronology stretching from the present day to a period several centuries ago. Sites producing tim- (*Continuing on page* 44)

THE GRIFFITH PARK DISASTER

By GEORGE H. CECIL

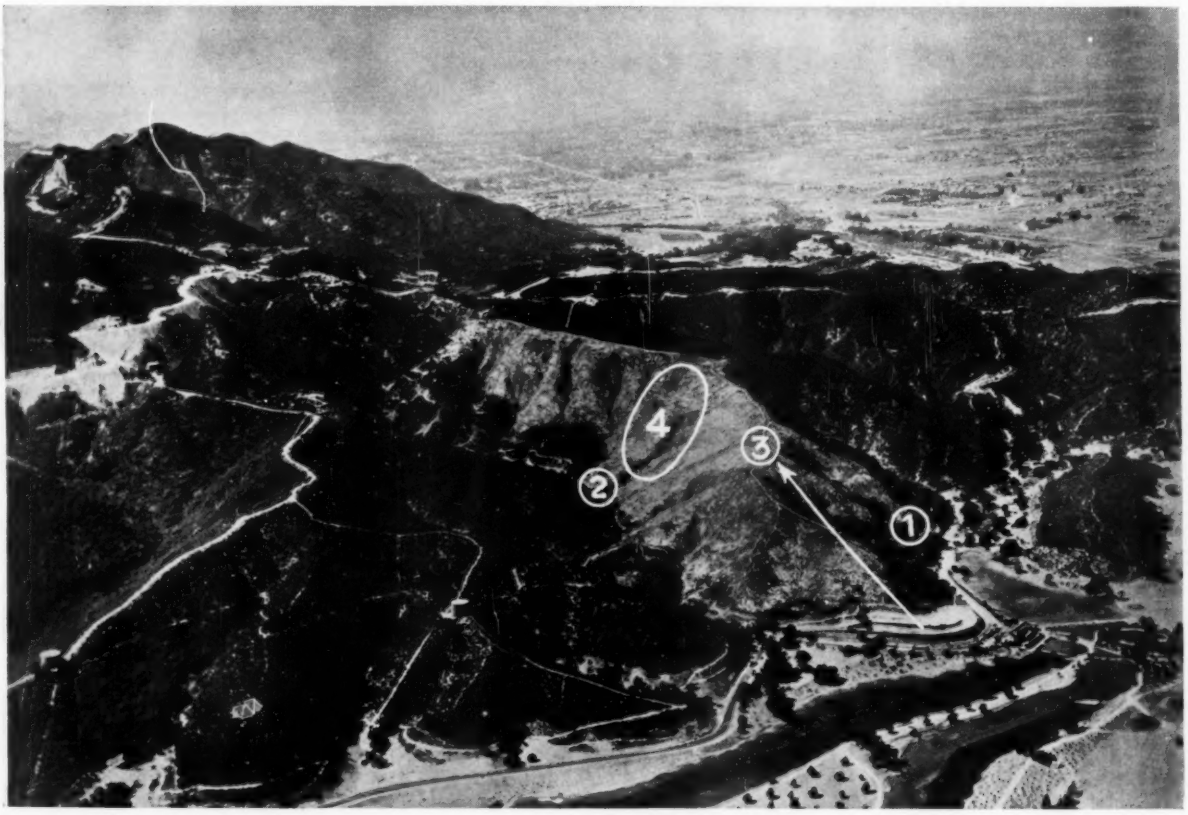
THE disastrous brush fire on October 3 in Griffith Park, in the City of Los Angeles, has left fire fighting agencies aghast. It seems incredible that twenty-six men should have burned to death in a brush fire of less than fifty acres in area—a fire that was practically extinguished within three hours of its start. Yet such is the fact.

It is highly improbable that the combination of conditions leading to the tragedy ever before existed or will occur again. There was nothing unusual in the weather conditions, although the fire occurred on one of the hottest days of the year. The relative humidity was low—between twenty and twenty-six—but not nearly so low as during other periods of the summer season. The wind movement was negative, although local air movements of varying intensity were created by the fire itself.

The one factor that differed, however, was the human element—the number of men in the immediate vicinity of the fire at the time of its occurrence. On the day of the fire there were nearly 4,000 laborers—otherwise unemployed citizens of Los Angeles County for whom it was necessary to provide useful employment—working in the Park within three or four miles of the fire. The work being performed was largely that of road construction and improvement. Consequently they were equipped mostly with shovels.

When the alarm of fire was sounded a large number of these men—inexperienced in forest fire fighting and under foremen equally inexperienced—were rushed to the scene and concentrated largely on the head of the fire. Several hundred made an attack from the rear and were at no time in any danger.

A different condition existed with reference to those in the path of the conflagration, however. While they would have been in no danger had they been less numerous or had they had trained supervision, their lack of experience, and that of their foremen, led them to do the most dangerous thing under the circumstances—to attack the head of a brush fire in heavy cover. Their plan of procedure was to cut a line up and down the slope across the head of the fire which was advancing toward them along the side of a canyon, with short but rapid runs. The plan might have been successful, or at least (*Continuing on page* 46)



Scene of the disastrous brush fire near Los Angeles, California, which claimed the lives of twenty-six men, despite the fact that it burned over less than fifty acres. (1) Shows where the fire started after a lighted cigarette had been thoughtlessly tossed in the brush. (2) Here several hundred inexperienced men were put to work "trenching" the fire, which burned up the hill toward (3). Without warning a crew became panic-stricken and started a backfire and in an instant the whole side of the canyon was ablaze. The men ran blindly, some down the canyon to escape, others up the canyon to a horrible death. In the encircled area (4) the twenty-six bodies were found.

Photograph by T. O. Sheckell

"In the Path of the Storm"...

★

Winner of First Prize—National Competition Conducted by
The American Forestry Association
for
Beautiful Photographs of Trees in America

AWARDS IN NATIONAL PHOTOGRAPHIC COMPETITION

Prize Winners Announced in The American Forestry Association's Contest for the "Most Beautiful Photographs of Trees in America"

A LANDSCAPE study made in the Holladay region of Utah,—the photographic work of T. O. Sheckell, of East Orange, New Jersey, has been named winner of the contest for "The Most Beautiful Photographs of Trees in America." It was selected from a collection of nearly 1,500 pictures competing in the national contest conducted by The American Forestry Association during 1933. Mr. Sheckell received a cash prize of $200 and an Association Certificate Award of Excellence.

Second prize was awarded John Kabel, of Dayton, Ohio, for his "Trees Near the Sea," a California subject; third prize to Ernest L. Crandall, of Washington, D. C., for "The Wind That Blows Between the Worlds," a Vermont landscape; fourth prize to Manley Brower, Coral Gables, Florida, for "Wind Blown Cocoanut Palms;" and fifth prize to Ray Atkeson, Portland, Oregon, for his "Mountain Hemlock."

In addition to five national honorable mention awards, the Jury of Awards gave Certificates of Excellence to thirty-four states and the District of Columbia. The remaining states were not sufficiently represented for competition.

The winning photographs, both national and state, together with six hundred of the most outstanding subjects entered in the competition, were hung in the new National Museum, at Washington, D. C., from November 17 to December 10, and viewed by hundreds of interested people. It is the plan of the Association to exhibit the prize winning pictures throughout the country.

FIRST PRIZE
($200)
***"In the Path of the Storm"*—Utah**
T. O. Sheckell, East Orange, N. J.

•

SECOND PRIZE
($100)
***"Trees Near the Sea"*—California**
John Kabel, Dayton, Ohio

•

THIRD PRIZE
($75)
***"Wind That Blows Between the Worlds"*—Vermont**
Ernest L. Crandall, Washington, D. C.

•

FOURTH PRIZE
($50)
***"Wind Blown Cocoanut Palms"*—Florida**
Manley Brower, Coral Gables, Florida

•

FIFTH PRIZE
($25)
***"Mountain Hemlock"*—Oregon**
Ray Atkeson, Portland, Oregon

The competition was designed by the Association to stimulate interest in the beauty of trees in the American landscape and to encourage photography as a medium of greater public appreciation of their beauty and service. The competition was conducted on the basis of national and state awards—cash prizes amounting to $450, supplemented by Certificate Awards of Excellence, for beautiful tree photographs irrespective of location, and Certificate Awards of Excellence for the most beautiful photograph from each state competing. Awards were based on beauty in photographic effect, utilizing trees singly, in groups, or in mass. The competition opened May 1 and closed October 31, 1933.

The Jury of Awards included George D. Pratt, President of The American Forestry Association; Dr. John C. Merriam, President of the Carnegie Institution of Washington; F. A. Whiting, President of the American Federation of Arts; and Alexander Wetmore, Assistant Secretary, United States National Museum.

National Honorable Mention Certificates were awarded the following: L. H. Fletemeyer, Lafayette, Indiana, for "Departing Day," an Indiana landscape; C. Frank Brockman, Longmire, Washington, for "A Deep Woods Trail," a woods scene in Mt. Rainier National Park; Edwin Hale Lincoln, Pittsfield, Massachusetts, for "Group of Birches," made in Massachusetts; Mrs. Louise Adams Floyd, New York City, for "Beech-Mastic," a trunk study, made in New York; and E. L. Gould, Orange, New Jersey, for "Windswept Cedars," a Maine landscape.

With state awards for Utah, Vermont, Florida, California, Oregon, Indiana, Washington, Massachusetts, New York and Maine automatically going to the National prize winners, other state certificates were awarded as follows: Alabama, "Homestead of Augusta," Overbey Studio, Mobile; Arizona, "On the Canyon Rim," John Kabel, Dayton, Ohio; Colorado, "The Lone Pine," Charles A. Dowling, Denver; Connecticut, "Sheltering Elm," Arthur J. Tefft, Hamden; District of Columbia, "Around the Tidal Basin," Ernest L. Crandall, Washington; Georgia, "Dogwood Trees," by R. E. Scaife, Atlanta; Kansas, "Morning," George Wiley, Manhattan; Kentucky, "November," J. Spanhorst, Cincinnati, Ohio; Louisiana, "The Oaks," Marshall Shackleford, Demopolis, Alabama; Maryland, "Fate," G. F. Blackburn, Washington, D. C.; Michigan, "Evening," Norton L. Avery, Lansing; and Minnesota, "Birches," by A. D. Roth, Minneapolis.

Mississippi, "Bellam Street Oaks," Mary E. Dismukes, Biloxi; Missouri, "Catalpa in Winter," L. R. Koenig, Webster Grove; Montana, "Alpine Firs," L. R. Koenig, Webster Grove, Missouri; New Hampshire, "Apple Tree," Eleanor Fischer, Brooklyn, New York; New Jersey, "Winter's Offering," T. O. Sheckell, East Orange; North Carolina, "Live Oaks," Bayard Wootten, Chapel Hill; Ohio, "Lombards," K. O. Townsend, Wellington; Oklahoma, "Rustic Well," R. S. Trulock, Oklahoma City; Pennsylvania, "Among the Hemlocks," H. F. McFeely, Lansdowne; South Carolina, "Will-o-the-Wisps," J. B. Wertz, Montclair, New Jersey; Tennessee, "Forest of the Big Smokies," E. L. Gould, Orange, New Jersey; Virginia, "Blue Ridge Mountain," G. F. Blackburn, Washington, D. C.; West Virginia, "The Patriach," R. R. Clappier, Huntington; Wisconsin, "The Sycamores," Florence Burnell, Hudson, Iowa.

PHOTOGRAPHING THE WESTERN HORNED OWL

By ALFRED M. BAILEY and R. J. NIEDRACH

(Photographs by the Authors)

ZERO weather and a driving snowstorm in late February is a poor combination for hunting birds' nests, but a rancher friend had advised us that he had one of a great horned owl ideally located for making motion pictures. We had started over the prairies east from Denver on this gray day, and while a dark mantle was hovering low over the foothills, obscuring the snow-covered peaks to the westward, there was no indication that the storm clouds would sweep in over the dark pines and cover the trees with a heavy blanket of snow.

We had just driven down a sheltered valley, with its gaunt cottonwoods, and into the farmyard of our friend when the clouds began to mass overhead and flakes of snow, almost invisible, began to filter among the trees. We were invited in to warm ourselves and have the inevitable cup of coffee before starting on our hike through the yellow pines. By the time we had thawed and warmed on all sides, our gray day had turned into a whirling snowstorm. We looked across the stormy expanse and longed for our host to suggest that it was too severe to go afield; but he pulled on his old mackinaw, turned up the collar, and observed that if the storm kept up we'd have tough bucking by the time we started back.

It really was not difficult, for once we were in that dark forest belt which extends east and south of Denver toward Colorado Springs, we were sheltered from the driving wind. There was something invigorating about a tramp over frozen ground, in the shelter of the evergreens. But with the snow whipped along on half a gale it was hard to believe that we were headed for a nesting bird.

Our friend must have led us by instinct rather than by bearings. He would pause occasionally to brush the flakes from his eyelashes, to look about, and then would lead on. We crossed innumerable little arroyos, protesting that he would have his guiding to do all over again when decent weather prevailed. We felt we should never be able to retrace our steps.

There she was, crouched low to avoid being discovered, in a nest of sticks about thirty feet up in a large pine, — the old Western Horned Owl.

Finally he paused alongside a frozen stream bed where several large pines thrust their snow-covered needles into the gray of the sky.

"Well, boys, there she is," he said with a chuckle. "See her ears?"

True enough, in a small nest of sticks, now covered by snow, we saw the tufts of a western horned owl. The old bird was crouched low to avoid detection. The wind swayed the tree top with every gust, but as the owl was facing into it, there was no telltale lifting of feathers to give her away.

About twenty-five feet away, ideally located for light conditions during most of the day, was another pine. We did not plan to make photographs during this blizzard, but we had come prepared to start our blind, if the bird should prove cooperative, and the tree would serve us well. We realized that if the eggs were uncovered for fifteen minutes they would be chilled, so we hoped to be able to put up a portion of the blind, so she would become accustomed to it, without flushing her from the nest. Consequently, after our initial discovery we paid no attention to her, but instead walked about, some distance away, talking in natural tones, as though we were not aware of her presence. Occasionally, we snapped twigs, carefully at first. Finally, when we saw that the old owl had settled lower upon her eggs, Niedrach was given a boost up the tree in which we planned to erect the blind.

He climbed slowly, with his back to the nesting owl. As he reached her level she half raised from the nest, and we cautioned him to stop. The old bird again settled upon her eggs.

The young birds, sunk in their feathers, huddled together for warmth on the snowy nest.

In a few moments he climbed above the level of the nest and, without looking directly at the owl, saw that his position was ideal. So he pulled a piece of canvas from his hunting coat and fastened it securely to several limbs. The wind flapped it back and forth with such noise that we feared our photographic victim would be flushed. But she remained sphinxlike upon the nest, while Niedrach backed hastily down the rough barked trunk.

As he reached the ground there was a swish of wings, and the mate of our brooding bird swept in out of the storm, alighted on the top of the nesting tree, where he swayed back and forth, silhouetted black against a background of whirling flakes. He crouched horizontally with wings half spread, glaring down at us. We could see him snapping his beak — which was just lost motion so far as making a terrifying noise goes — for the whistling wind carried away all sound.

We left our owls to themselves, with only the flapping piece of canvas as a reminder of our visit. We knew the brooding bird would stay on her eggs until relieved by her mate, and that later, when our real blind was erected, we should have little difficulty in securing our pictures.

Horned owls are common birds throughout North America, geographic races ranging from northern Alaska into southern Mexico and from the Atlantic to the Pacific. Their nesting sites

Puzzle picture — find the nest! Just as a hint, it lies almost completely camouflaged, high up in the dark, snow-covered pine, and the birds are plainly visible.

are varied according to the region they inhabit. They may nest one hundred feet in the air in a giant cottonwood, in a crevice in a towering cliff, or upon a grass hummock of a treeless prairie. The eggs are from two to three in number ordinarily, but in Colorado we have often found four in a set.

We were making life history photographs of the animal and plant life of Colorado for our respective institutions, the Chicago Academy of Sciences and the Colorado Museum of Natural History, and had had some little success. The previous year we had photographed in the alpine zone, among the high peaks of the Colorado Rockies, and this season we hoped to get a fair representation of the prairie forms. As the western horned owl is one of the earliest birds to nest, laying in late February and through March, this was our first attempt.

Ordinarily, the actual making of the photographs was the delightful part of the work, for the cameraman sat inside the place of concealment, awaiting the return of the bird to its nest or the mammal to its burrow. But to take owl pictures in the late winter in Colorado was a slightly different task. It meant sitting in a wind-blown treetop, and, while it is true that a thermometer would register well above freezing, the photographer was always approaching absolute zero. Consequently, as usual, we flipped a coin to see who would have the right of choosing the place of haven. Bailey was the winner, and he very graciously waived his rights in the matter and allowed Niedrach the doubtful privilege of making the first attempt.

After all, the making of pictures is mostly a matter of preparation. We made several visits to our owls before actually starting photographing operations, always flushing the brooding bird, and when we found one of the white eggs with a slight pip, we realized that the opportune time had arrived. The real canvas blind had been in place for more than a week, without resentment on the part of the birds, so Niedrach shinned up the tree, dropped a line to which the camera and tripod were fastened, and he hoisted away. The tripod was lashed to convenient limbs, the camera aimed at the nest, and the blind carefully arranged so that the photographer was concealed. After that the other "photographer" left the vicinity, thankful that he was not on the chilly aerial perch.

Scarcely had the "ground force" disappeared than there was a swish of great wings as the old bird sailed into view from somewhere among the dark pines and, with little ceremony, settled upon her hatching eggs. She proved a delightful photographic subject, for she could be flushed by a yell and would return within a few minutes. Many views were obtained.

Day followed day and many visits were made. The downy white chicks, with eyes mere slits, grew into fuzzy gray fellows whose dark down exactly matched the gray bark of the pines. When they clustered together for warmth upon their snow covered nest, they looked like dwarfs. We had always felt sorry for youngsters such as these, hatched at such an inhospitable time of the year, but thirty minutes in the photographic blind changed our attitude. The photographer had no one to keep him warm.

The old ones soon became accustomed to the noise of the camera, and while they would occasionally sit on the edge of the nest, glaring with large yellow eyes and "whoofing" resentfully at it, they paid remarkably little attention. The parent birds must have secured their prey at night or in the twilight hours, for we never saw them coming in with food. But as the fuzzy fellows increased in size, fresh animals were continually in the nest. Small mammals, such as rabbits, mice and pocket gophers made up the bill of fare. In spite of the fact that the eastern cousin of our western owl has a bad reputation as a bird killer, we never found remains of feathered victims. We often climbed the nesting tree to handle the young. The old ones would sit in nearby pines, swearing with a clicking of beaks as we tried to tame the babies. At first, the young merely huddled to the side of the nest, but as they increased in size, they snapped their rubbery mandibles and spread their wings in aggressive attitudes.

They grew rapidly, so by the time spring had pushed winter back into the foothills, and the flowering plants of the prairies were nodding in every breeze, our owls were ready to try their own wings. We made a last visit and found the young on limbs a short distance from the nest. And as usual, we were welcomed like distant cousins trying to borrow money. They threw up their wings, snapped beaks, and acted in a manner extremely discourteous. When we placed the camera too close they took matters into their own hands, or wings, and sailed heavily away to a neighboring tree, where the old ones joined them.

Our last picture of the group was of all five clustered on an outstretched limb of a yellow pine, glaring at us with their bright yellow eyes. They seemed to tell us that, although we may have become acquainted in the past several weeks, there was no friendship involved.

TRAIL RIDERS OF THE NATIONAL FORESTS

It will be "Boots and Saddles!" again in 1934 for the "Trail Riders of the National Forests."

In announcing its 1934 activities, The American Forestry Association reveals that the wilderness riders, organized last year to make possible public exploration of the remaining wilderness areas in America, are scheduled to explore two regions. They will return to Montana, where the trips were conducted last summer. In addition, a trip is being planned to New Mexico to probe the secrets of the romantic Gila Wilderness. While definite dates have not been set, the Montana parties will get under way in July, with the New Mexico venture coming later.

In Montana the Riders will explore both the North Fork and Sun River Wildernesses—combining the outstanding features of the two areas into one trip. The North Fork and the Sun River were the scenes of the pioneer trips of the Trail Riders in 1933.

As before, the trips will be made under the direction of The American Forestry Association, with the cooperation of the United States Forest Service and other agencies. Forest Rangers will ride with the parties, while expert wranglers, guides and packers will serve every need of the trail. The cost of the trips will be at a minimum based, as before, on actual expenses.

Further announcement of the 1934 trips will be made in the February issue of AMERICAN FORESTS. Watch for it! In the meantime make plans to ride with one or both parties.

EDITORIAL

The New National Park Emergency

UNDER the President's reorganization of government bureaus, the National Park Service ceased to exist on August 10 last, becoming the Office of National Parks, Buildings and Reservations. With this change of title, the bureau experienced a remarkable development which has not yet been clarified in the public mind. Of more serious effect is the fact that the resulting confusion endangers National Park standards in a Congress more than half new, quite uninformed in National Park background, retaining few of the national park leaders of the past, and uncertain as to the extent to which national ideals will guide its park policy. Self-seeking localities, whose past attempts to obtain national parks in their own interests have been stopped by public opinion, are unquestionably awake to the confused situation and the opportunities it offers for political park making.

Few bureaus of the National Government have expanded so greatly in so short a time. Previous to last March the National Parks System and a number of the National Monuments were its only charges. Its appropriations slightly exceeded two million dollars. Toward the close of the last session, Congress passed for it a bill making Washington's Headquarters at Morristown, New Jersey, a National Historical Park. The purpose of this new type of park was to start a needed new system of federal reservations quite distinct from the established National Parks System. But in the absence of a clear announcement of purpose the public failed to grasp the distinction and unfortunate confusion has since clouded its mind as to the difference between the two types of parks. The press ignored the word "historical" and many demanded to know when National Park standards had been extended to cover historical sites *per se*.

Then came the President's reorganization. Over night there were added from the National Forests sixteen National Monuments, and from the War Department two National Parks, both sub-standard as primeval parks, ten National Monuments, eleven National Military Parks, ten Battlefield Sites, eleven National Cemeteries and four miscellaneous memorials. Also the bureau was charged with administering all federal buildings throughout the country with the exception of post offices and customs houses, and the metropolitan parks of Washington, the new Mount Vernon Highway and the Memorial Bridge just finished across the Potomac. Appropriations have risen from two to forty millions—including public works funds.

Many proudly hailed the city parks of Washington as National Parks, which they are not. Several Sky-Line Highways which obviously are not National Parks have been projected as National Parkways for approval by the new Congress. Study of this aggregation will, of course, result in reorganization but meantime confusion in the public mind as to what really constitutes a National Park is heightened and a new Congress is at hand largely lacking, we fear, understanding of those high ideals and clear principles which have made the old National Park System one of the country's finest and most inspirational institutions.

That many demands will be made upon the new Congress for National Parks that are neither national in interest or character seems certain. In these days when every state and almost every locality is exerting political influence for federal aid in one form or another, what will Congress say to these demands for provincial and sub-standard National Parks? Once our magnificent system of Yellowstones, Glaciers and Grand Canyons is riddled with commonplace areas falsely parading as National Parks the foundation of our real National Park System crumbles. The term "National Park" should stand out clear and resplendent in meaning and purpose, both to Congress and the public, and all lesser reservations desirable from historical or other standpoints should be designated so as to leave the National Parks in clear relief and not in clouds of confusion.

It is to be hoped that the Secretary of the Interior will act speedily and definitely to clarify the situation so that there will be no doubt either in the mind of the public or of Congress that a National Park is a masterpiece of God's creation framed and protected for all time for the spiritual and physical uplift of this and future generations. That ideal, we believe, is the only thing that will save the National Park System in its present crisis.

As for the thinking citizen, his duty in the emergency is clear. It is personally to appeal each to his own Congressmen to do all possible toward maintaining the majesty of the system by protecting it against a lost meaning and a lost purpose.

The C.C.C. Speaks

EVER since the spring of 1933, when the Civilian Conservation Corps was created, praise and criticism of the project has been voiced. Lauded as a builder of men, it has been called a regimentation of labor. Hailed as a new day for conservation, it has been branded a wanton expenditure of money by visionless taxpayers. Commended by one political group, it has been condemned by another. To what extent this cross fire of commendation and criticism has dimmed and confused in the public mind the human values of the project, it is impossible to say. But it is refreshing and reassuring to have from the enrolled members of the Corps themselves abundant first

hand testimony of what the project has meant to them and their loved ones.

This The American Forestry Association has obtained through its recent contest giving every enrolled member of the Corps an opportunity to express in his own way his judgment of the benefits of the emergency conservation program. Hundreds responded. Many of them expressed profound gratitude merely at the opportunity to tell what the Corps has meant to them, their fathers, mothers, brothers and sisters. Thus the rank and file of the Civilian Conservation Corps has spoken and those who have so freely raised their voices in loose criticism of the project would do well to read these human documents and ask themselves "Am I fair to my fellowman?" Certainly a reading of them clarifies the human values of the project and promotes conviction of its worthiness for a permanent place in the social and economic life of a new America.

"Peace, Ah, I have found it at last," says Allen Cook, an enrolled member of Company 487, Alabama, in a remarkable statement published in the December issue of AMERICAN FORESTS. Three other enrolled members, James Kidwell, Gerald Street and K. Edd Teston present straightforward statements in this issue. The editorial offices of AMERICAN FORESTS contain hundreds of similar stories of lost hope, faith and purpose regained. Says Wendell W. Simpson, Company 482, Mississippi, "I have been able to send my older sister back to school and to keep my smaller sisters and brothers in school. I have provided my mother with food and clothes. Now I face the world with a smile." Gerald P. White, Company 650, Wisconsin, writes: "Our wise leaders at Washington met young America at the cross-road and turned him the right way. I believe this to be the honest conviction of every enrolled member."

Harry Dreger, Company 341, Pennsylvania, says. "Whatever impression the C.C.C. has made on the rest of the world, we know that it is giving American youth a start in life." And from Leon Maurer, Company 1321, Pennsylvania: "For me, and for my comrades, the C.C.C. has proved a promised land, a real milestone in lives we hope to make useful." "I join the voices of my comrades in thanking President Roosevelt for giving us hope in work," writes A. S. Perritt, Company 1422, Louisiana. Nicholas DeSantis, Company 340, Pennsylvania, has this to say: "With honest-to-goodness tears in my eyes I thank the Divine Father that President Roosevelt had enough foresight to plan the Civilian Conservation Corps and that the good people of America backed him up. America! You may reach out for us in the future and find us better citizens as a result of your wise planning!"

These are human voices, speaking with simplicity and sincerity and from actual experience. It required days to read the many stories and no one can doubt after reading them that the formula of leadership and labor, wisely mixed with kindness and cleanliness, and closeted a while with nature, can alter any circumstance, no matter how hopeless it may appear. And if victims of the circumstance of disillusioned youth and depression, after a few months, unite in voicing its value, then the Civilian Conservation Corps must stand as one of the greatest enterprises a government and a people can maintain.

On page 3 of this issue Arthur Ringland, in his article "The Patriotism of Peace," pictures the vision that led to the creation of the Corps, the emergency that gave it birth, the magnificence of spirit that developed it, and the factors that entitle it to permanency. To the youth of America—the youth of today and the youth to come—permanency for the Civilian Conservation Corps means—better preparedness for living, the moulding of ideals of "social responsibility to themselves, to others, to the community and to their country."

Iowa's Conservation Program

A PAY-AS-YOU-GO plan of conservation and public recreation built on the principle of enlightened self interest has been submitted in a twenty-five-year program to the people of Iowa by the State Board of Conservation and the State Fish and Game Commission. The plan would transfer part of the responsibility for purchases of land for forest preserves and parks from the State to the local communities, encourage farmers to charge hunters for permission to shoot on their lands, and assume the right of the State to collect admission fees to the State Parks.

Generally regarded as a region of treeless prairies and great farms, the Iowa pioneers found approximately 5,000,000 acres of forest, covering approximately one-seventh of the total area. Under progressive agricultural development the present forest has been reduced by more than half, and with cultivation and drainage, lakes have decreased in size and depth, streams have dried up and become heavy with mud, ground water levels have receded and tons of fertile top soil are annually washed down the Mississippi to the Gulf.

The three-fold program featuring erosion control, conservation of surface waters, and conservation of forest and small cover on the land, proposes the preservation of beautiful places, protection of wild life, improvement of the landscape, and more easily available opportunities for swimming, boating, picnicking, camping, hunting, and fishing. These would be so located that no citizen need travel further than thirty-five or forty miles to find suitable outdoor recreation. To accomplish this the number and area of State parks, forest preserves, wild life refuges and game sanctuaries would be increased; lakes and streams dredged; the Federally owned wild life refuge on the Mississippi River enlarged; and possibly a National Forest purchase unit established within Iowa.

Expressing satisfaction with the seventy-five State preserves and State Parks now including 20,000 acres of fine woodlands, the report suggests that cities and counties assume some of the burden of buying land for more public parks and forests. The proposal is supported by the fact that the public advantages would be as great as if the State acquires the lands, and the cost would be paid by those most directly benefited. Monetary compensation to the farmer through a system of bird shooting permits would be encouraged through technical aid in game management and protection against trespass. This would have the effect of increasing the number and area of sanctuaries and game refuges.

While part of the money to finance the plan may be secured by annual appropriations from the State Legislature and some from the local communities, special reliance would be placed on returns to be secured from admission fees to the State Parks, or by special taxes to those who use the privileges provided. Taken as a whole, the report states that the entire program can be set up and carried for a few cents per capita or about $1.00 for each Iowa family during each of the fifteen years of initial expansion.

Iowa's twenty-five year conservation plan emphasizing State responsibilities for public recreation is a mark of constructive leadership, which if realized will prove that the self reliant spirit of the pioneer still lives. We wish her success!

"WHAT THE C.C.C. HAS DONE FOR ME"

AMERICAN FORESTS here presents the first of a series of stories written by enrolled members of the Civilian Conservation Corps and selected as the prize winning contributions in the Magazine's recently concluded contest on the subject "What the Civilian Conservation Corps Has Done for Me." Limited to enrolled members of the Corps and to manuscripts of one thousand words or less, the contest brought hundreds of stories from the fifteen hundred camps which dot the country from coast to coast.

These stories form a remarkable narrative of human experiences and are unquestionably the best spoken evidence thus far available of the real value of the Civilian Conservation Corps to the youth of America and to the thousands of homes which they left for the "road" in search of work to help distressed parents.

The stories awarded first, second and third prizes are published in this issue. Brief biographical sketches of the authors are given on page 21. Winners of the fourth and fifth prizes are Lee C. Crutchfield, Jr., 323d Company, Camp NP-2, Yorktown, Virginia, and Ray Johnston, Camp P-65, Company 1535, Durbin, West Virginia. Their stories will appear in the February number and the following issues will contain stories selected as meriting honorable mention. In accordance with the contest announcement, awards have been based upon the story and not its literary construction. All manuscripts, therefore, are being published as written and without editing.—*Editor.*

"A TASK, A PLAN AND FREEDOM"

By James Kidwell

Company 1639, Civilian Conservation Corps
RUSHVILLE, ILLINOIS

James Kidwell
First Prize Winner

TO GIVE an adequate conception of what the C.C.C. has done for me I am impelled to describe the background leading up to my connection with it.

First, imagine yourself as a young man of good family, well educated, happy, prosperous and surrounded by everything that makes life worth while.

Then imagine yourself, torn from this environment and driven like a hunted dog through four years of unemployment, hunger and famine, ending in the complete and utter degradation of a homeless bum. Before your mental vision unroll a map of the United States, Canada and Old Mexico. The kalidescope unrolls before your plodding feet, from box car doors, locomotive tenders, trucks, automobiles and every other method of transportation imaginable. There are brief intervals of back-breaking labor at starvation wages in southern cotton fields, western wheat harvests, logging camps and Canadian fisheries. But, always you are a bum without home, friends, or family and your undernourished body is utterly without purpose in life.

It is a late afternoon in the early spring. You are crouched in the outskirts of the Wabash Railroad yards in Kansas City waiting for a crack freight train's highball whistle. A huge black cloud of cyclonic proportions is looming ominously out of the northwest, and the earth reverberates with angry thunder. The lightning is intense and jagged. Its flaring tips presage a frightful electrical storm. At last the highball whistle drifts out eriely through the gathering storm and the train rolls by with rapidly increasing momentum. A railroad bull is walking down the tops waving a gun in either hand, but his menacing figure dwindles into insignificance, compared to the fact that the long line of cars is drifting by without revealing a single "empty." At last, in desperation, and impelled by an empty stomach and the prospect of another night in Kansas City's inhospitable confines, you "swing" an oil car.

To ride the "tops" on such a night is a physical impossibility. Ever notice the plank walks on an oiler? That is where you are riding tonight. The walks are dotted with bums and as the train proceeds other waifs swing on, so that

presently you are wedged in the center of a walk on the side of the car, powerless to shift position and exposed to the full force of the storm. You are drenched by driving rain interspersed by occasional bursts of hail. The gale threatens momentarily to consign you from your precarious perch to oblivion beneath the wheels. The train makes a one hundred and four mile run before it stops. Frightful balls of lightning play around the steel tank. The cold numbs you and the jolting car would reflect credit on a bucking broncho.

If you are capable of living through in imagination the night described above, then you have a faint perception of what four years on the bum really means. In addition you can better understand how all my finer instincts and impulses were being rapidly destroyed and how I was losing faith in everything that goes to make life worth while. Perhaps the words savor of a panacea testimonial but I can truthfully say that the day a social worker met me in a Springfield, Illinois, flop house and persuaded me to join the C.C.C. was a turning point in my life.

I believe I can best sum up my debt to the C.C.C. by using an itemized list as follows:

First, upon enrollment I was almost a physical wreck. The C.C.C. provided an abundance of wholesome food. The fresh air of the woodlands and healthy exercise gave me an enormous appetite. Within thirty days I gained thirty pounds in weight and am now, at the expiration of five months, normal in weight. My muscles have expanded and my steps spring where once they drug. Energy once nil is now boundless and the sheer joy of physical health and well being is mine.

Second, life in the C.C.C. has restored my faith. Spiritual life cannot exist for a man who is forced to live like a famine driven wolf wresting a bare existence from the winds of chance. In the virgin forest man's inhumanity to man is a thing unknown. The trees are temples, birds and the wind drifting through the pine needles chant requiems. The mystery of growing things, the silence that is never still, bring out somehow the things that are best in a man.

Third, as a citizen I am transformed. Government is a hateful thing to a bum. In his misshaped vision it is a hateful monster that denies his inherent rights. But, behold, the Government has remembered me. It has given me a job, a world of comforts and many luxuries. It has removed from my door the spectre of want. What more natural than that my old radical tendencies are being replaced by the stirrings of some of the finer attributes of good citizenship.

Fourth, an eminent psychologist has stated that the three things necessary to happiness are a task, a plan, and freedom. In the C.C.C. I have found all three. My troubles are drowned by hard work. In forestry I have, for the first time, found a profession that appeals to me. So far as freedom is concerned, in what place could I hope to find more isolation from the cares that imprison civilization than in the endless solitudes of the forest?

Fifth, in the C.C.C. I discovered for the first time the value of an ordered existence, of regular habits of work, play and eating. It is essentially a communistic organization; in it I have learned the necessity of cooperation. Every man here is his brother's keeper; only by exercising the basic principles of unselfishness is life made tolerable.

A list of what the C.C.C. has done for me divided into its smaller aspects could be continued indefinitely and the things enumerated above are but a mere recital of the outstanding benefits. I think I could group the sum total into an even smaller compass and express it by the single word, happiness. That is, really, the chief end of life and the goal above all others for which man strives. I could write volumes on what the C.C.C. has done for me, but I think this small word more expressive than an encyclopedia. Apropos Lord Tennyson, time and fate may bear me far and wide but I scarcely dare believe their tomes will ever reveal anything that will work a greater transformation in my life nor be of greater import than has the C.C.C.

"WISDOM FROM THE TREES"

By Gerald Street
Camp F-22 A, Civilian Conservation Corps
McNARY, ARIZONA

Gerald Street
Second Prize Winner

I'M not much for writing what I think, but this is one time I'm going to write just as my feelings are, direct from my heart. I believe I can do it because I've just been acheing to tell somebody what dear old Roosevelt's C.C.C. has done for me.

When I first signed up I was a bit skeptical as to whether six months in the Army would be very valuable time spent. I felt that perhaps I would probably be compelled to associate with a gang of bums and to always feel that I was in a sort of penitentiary; I somehow sensed that at the end of my term I would be even worse off, that I might become a bum or thug myself.

Yet, in six months work here in this ideal "Indian Summer" life in the woods, my entire trend of thought, my very life itself, has been altered for the better and to a miraculous degree.

When I first came here I was a weakling. I couldn't think for myself. I possessed an inferiority complex. I was bigoted in that I only thought of myself and felt that I was individually important and necessary. I was prejudiced against my Government and society in general. As bad as that, or worse, I was discouraged with life and was ready to give up the struggle of attempting to adjust myself. I felt "of" a world but not "in" it. I only made myself enlist because my parents were in need and it was my only chance to help them while there was absolutely nothing else to do—to help them after they had done so much for me. I wondered if I could bear to stay my full term.

Now I'm a new youth. I have gained twenty pounds, confidence, a little wisdom from the trees, mountains, rivers, associates—and, I believe I can lick any tree monkey in camp with the gloves on. I have learned the value of our National Forests, our rangers, and of brotherhood. I know that I'm not individually important but am only one of millions and that success is nothing much except collectively speaking: the lightning can knock a tree down but it doesn't matter so much; the *forest* is what counts. Roosevelt's actions have taught me that unity, sacrifice, and labor and

brotherhood are the greatest and noblest and wisest means of living on earth. I have become more patriotic than I ever dreamed I could be and have confidence in the future America. I am more anxious to do my part. My ambitions, fired in school days, and quenched to dormancy by the devastating depression, have begun to spark once more. I have high aims and the foundation of them is *service* to my fellowmen. I have been made to feel the value of comradeship and, somehow, I feel lately that I am a definite part of society, that I am part of America, with my bit to be done. I have already re-enlisted for the next six months not only because it would be difficult to get work outside, but also because I've begun to love the woods, the Army and forestry officials, the work of preserving the forests.

I have seen the Petrified Forests, Painted Desert, Grand Canyon, Zane Grey's Mogollon Rim (Tonto Rim), Indian Ruins, Mormon life, both historical and present, and I have made friends with live Navajo and Apache Indians. I've almost had a college education. Near me now is a book, *Genius and Character*, by Emil Ludwig, one of dozens we have in our library. My health is like the sparkling spring water from these high mountains. When I go out from here to battle with life, I will be strong, my mind will be fresh and clean and my heart will be set aright.

Too, I will possess an everlasting love for the forest, for Roosevelt, our great genius, who made it possible for me and thousands of other boys to put a smile on the rugged, discouraged faces of the old folk, our loved ones back home.

"A HOME AND HARVEST SAVED"

By K. Edd Teston
Camp F-19 N, Civilian Conservation Corps
BLUIT, NEW MEXICO

K. Edd Teston
Third Prize Winner

I'M not a writer. I wish I was. I'd like to picture to you a little "frame shanty on the claim." That's where I hail from. It is located in the extreme southern end of Roosevelt County, in New Mexico—among the sandhills.

To the frequent passer-by it may look like a rustler's hide-out or a moonshiner's abode, but to me it's home. I love it.

Once we were considered well-to-do cotton farmers, on the great plains of western Texas. The years 1930, 1931, and 1932 came. Our fine, level, black-land farm wasn't quite payed out. Needless to say we lost it. With just enough money left to file on some government land, we came to New Mexico, erected our humble shack, and started to wrestling a living from old Mother earth. But alas! The land was new, and not being over fertile or pulverized, the succeeding crop was a failure. We were at our row's end, broke, stock poor, and not able to get back to Texas. This was one of life's darkest moments for us.

Fate had been unkind. We were ruined, starving, hopeless. It would now be impossible for us to prove up on our half-section of government land.

This was the condition my family and myself were in when the Civilian Conservation Corps was organized. I went to Portales and enlisted, agreeing to send $27.50 home monthly.

I was sent to the conditioning camp at Ft. Bliss and on to work Camp F 19 N, near Santa Fe. I worked hard. I had to, because I heard from home that Mother and little Sister had taken my place in the field, and were making Dad real hands. It gave me courage to forge ahead. I really enjoy helping others that try to help themselves. On the other hand I hated to see Mother work all day in the hot sun, for her health is very poor, and little Sister is so small.

I couldn't keep the mist out of my eyes as I read a letter from home last month saying that Mother and Sister were hoeing cotton barefooted. It seemed that all I could manage to send home went for horse, hog, and cow feed. Poor old Dad was working day and night. The work stock were so poor that they could not pull him on the plows. He had to walk from daylight until dark.

And now a word about myself. As I said before, I worked hard. My conscience would have hurt me if I hadn't. I was amply awarded. When the Act was passed that special duty men were to get a fifteen-dollar raise I was one of the lucky ten to receive it. That helped a lot. I immediately started sending the raise money home, and slowly but surely I began to help my beloved family out of the rut.

Then my big chance came. I was going to get to go home! Labor Day and a few consecutive days were granted us as a vacation. I purchased a round trip ticket, by truck, for only $2.50.

You can hardly imagine how happy I really was to get to go home. I had been away only four months, but one can hardly realize how depression and hardships can strengthen family ties.

As I went down the lane to "home sweet home" I had to pass the fields first. Can you imagine my bewilderment at seeing acres and acres of waving, tasseled corn—milo maize, and blooming cotton? They had done well, I could see at a glance. And I, being a farmer, realized that our hardships were at an end. It would be a month, maybe two, before the crop would start paying returns, but I was working for Uncle Bud, and drawing $45 per. I could easy tide us over until harvest.

I couldn't keep my imagination from running away with me; maybe I could get that suit I had been wanting for three years!

About this time I had reached the gate. Then followed the happiest reunion I have ever witnessed. Once again the family circle was unbroken. I couldn't help uttering a prayer of thankfulness. God had been kind to us.

My folks were proud of me it seemed. They said it made them happy to know that their son had made one of the lucky ten out of the two hundred odd, to get a fifteen-dollar raise. I wasn't proud of myself, of coarse, but yet it made me happy to realize that I held the record in camp for sending home the largest amount of money. The next day, on inspecting the crop closer, Dad and I predicted eighty or ninety tons of corn and fifteen bales of cotton. Out of chaos and ruin had come plenty.

After a short four-day vacation I again started back to the Santa Fe National Forest, and camp. I was glad to get back; because after all I feel we are doing a great work. I know we are helping thousands of worthy, but poor, parents, and paving the way for forests and comfort for the generations to come.

THE LAND PROBLEM IN FLORIDA

By DR. A. STUART CAMPBELL

Eleven million acres or almost one-third the land area of Florida is tax delinquent. What is the answer to this critical problem? The author - Dr. A. Stuart Campbell of the College of Commerce, University of Florida - here analyzes the situation after an extended study of state conditions and state needs. Solution, he holds, demands recognition by the people of the state that the major portion of Florida's land can be restored to productivity only through forestry. The sooner they begin planning to this end, he concludes, the sooner prosperity will be assured.

Florida is not alone in the dilemma of tax-dry land. How to restore vast areas of cut over forest lands to the tax roll and again start the flow of income for schools, local government, community and state prosperity, is a problem which today confronts many states and challenges permanent national prosperity. Although Dr. Campbell's article deals only with Florida, it should serve a highly useful purpose in pointing to the need of critical study and constructive land planning by other states and by the nation as a whole.—Editor.

A FACT not commonly realized by the average citizen of Florida, is that the prosperity of his State will ultimately depend upon forestry. The truth of this statement perhaps needs some proof, and I propose to present it.

At the present time the greatest wealth-producing activity in Florida is the tourist business. It is impossible to estimate the wealth brought into the State by tourists, because of the varied and dissimilar ways in which they spend their money, but it is agreed that the direct and indirect revenue received by Florida organizations and individuals from tourists constitutes the greatest State income from any one source. Measured by the value of products, the combined manufacturing industries rank second, and agriculture third. In 1929, the value of manufactured products was $232,386,427; of agricultural products, $92,009,255. A group of economic activities probably ranking fourth in importance in the State is merchandising, although there are no figures quite comparable to those given for manufacturing and agriculture. However, the importance of merchandising is shown by net sales, which in 1929 amounted to $504,523,000 for retail and $466,535,000 for wholesale establishments.

Urbanization of rural communities and areas is going on steadily in Florida and calls for more land each year, but the total area required for urban expansion conceivably should not seriously affect the land problem of the State for a great many years. How much land then is required for the four leading economic activities of the State? Florida contains 35,111,040 acres of land and in point of area is the second largest state east of the Mississippi River, being exceeded only by Georgia. The amount of land required by tourists is very small in relation to the total area of the State. The combined area of the hunting and fishing preserves, bathing beaches, golf courses, racetracks, amusement parks and resorts, is but a small fraction of the State's total area. Some additional land unquestionably will be required for recreational purposes in the future but considering both tourist and recreational needs the area will be small, relatively. Game and fish preserves are usually heavily wooded, so land used in this manner would really be used for forestry purposes. Manufacturing is mostly carried on in urban communities, and requires such a small amount of land in relation to the total area of the State, that it does not enter directly into the land problem. Of course, indirectly, the growth of manufactures requiring special raw materials might call for additional lands for production purposes but most of this production would be classed as agriculture. Likewise, merchandising will not require sufficient land seriously to affect the land situation.

Agriculture remains for consideration. Contrary to uniformed opinion, agriculture uses a surprisingly small part of the State's area. Of the 35,111,040 acres of land in Florida, only slightly over 5,000,000 acres, or approximately fourteen per cent, were included in farms in 1930 and of this farm area almost 2,000,000 acres were in woodland and waste land, leaving only nine per cent of the State's area as crop and pasture land in farms. Thus, less than ten per cent of the area of the State is used for producing agricultural crops and livestock.

The trend of utilization of land in Florida for agriculture has been downward for the last decade. In 1920, 6,046,691 acres were in farms; in 1925, 5,864,519 acres; and in 1930, 5,026,617 acres. This downward trend in acreage devoted to agriculture, when the population and wealth of the State have been increasing rapidly, seems to indicate that extensive agricultural expansion in Florida has received an economic check. A fact not commonly known is that most of the land in Florida is porous and allows the rain to seep through quickly, instead of retaining the moisture. The use of a great deal of fertilizer is therefore required—a fact which naturally increases the cost of agricultural production. The peculiar nature of the soil is due to the fact that Florida was originally under the ocean, being gradually pushed up by the forces of nature. Such a soil entails high cost of production for all crops, and is submarginal for some.

The following table shows the trend in the production of representative agricultural crops and livestock in Florida since the beginning of the present century:

	1899	1909	1919	1924	1929
Corn, bushels	5,311,050	7,023,767	8,831,112	6,902,661	6,617,724
Hay, tons	19,653	51,546	71,109	54,467	36,725
Cotton, bales	61,856	65,056	19,538	21,794	34,426
Tobacco, lbs.	1,125,600	3,505,801	4,473,696	4,495,405	9,248,190
Oranges, bxs.	273,295	4,887,838	5,997,897	.....	9,720,998
Grapefruit, bxs.	12,306	1,061,527	3,158,431	.....	5,971,989
Truck Vegetables, value	.....	$4,466,005	$13,303,169	.....	$17,040,764
	1900	1910	1920	1925	1930
Horses	42,811	45,640	38,570	28,848	21,300
Cattle	751,261	845,188	638,981	656,217	431,448
Swine	464,277	810,069	755,481	497,780	567,115
Sheep	124,520	113,701	64,659	59,729	47,275

It can be seen from this table that the production trend is downward for corn, hay, cotton, and all of the livestock. It is upward for citrus fruits, truck vegetables, and tobacco. What are the possibilities of an expansion in the production of the latter?

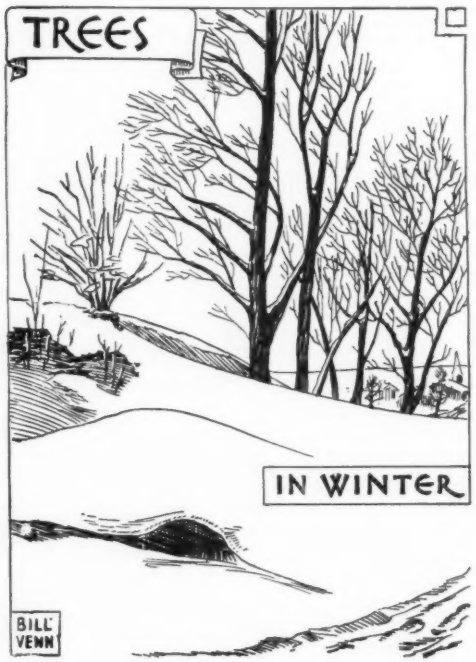
About three-fifths of the agricultural income in Florida comes from citrus fruits and truck vegetables. According to the College of Agriculture, University of Florida, the present potential capacity of the citrus groves of Florida, including all young, non-bearing trees, is approximately forty million boxes annually. In 1929, shipments of citrus from the state totalled about fifteen and one-half million boxes. There does not seem to be any considerable expansion possible there in the near future. Truck vegetables are commonly shipped from Florida principally in the winter months, when there are no fresh vegetables in the states farther north. During the remainder of the growing season, Florida vegetables are under a disadvantage in competing in the eastern markets with those produced in other eastern states, because of the greater transportation costs. While this market may expand, at the present time there seems to be little possibility of a very great expansion, which would require the use of much additional land. As a matter of fact, there is an over-production of both citrus fruits and truck vegetables in Florida, which last year resulted in a moratorium being declared on grapefruit picking, and the outright destruction of one-third of the celery crop. The acreage in citrus fruits at present constitutes only two per cent of the total land area of the State, and the acreage in truck vegetables only one per cent, and even if these areas were doubled, they would amount to only six per cent of the State's area. Other tobacco-growing sections of our country would seem to have a sufficient natural advantage over Florida in tobacco production to prevent any very great expansion in this crop. Besides, only 10,000 acres in the State are in tobacco, and this acreage could be expanded many times without taking up any appreciable proportion of the State's acreage. Although it does not appear that there will be any great increase in the land area in the State devoted to the production of corn, hay and cotton, the present acreage given over to these crops—slightly more than two per cent of the State's area—might be doubled without affecting the land problem.

Livestock is produced in Florida under difficulties, owing principally to the scarcity of (*Continuing on page* 46)

At present not more than fifteen per cent of the land in Florida is in use for agriculture, leaving more than eighty per cent of its great area to either lie idle or be put to work to produce forest products. That its land and climate are favorably adapted to forestry is indicated by this picture of thirteen year old longleaf pine in the Choctawatchee National Forest which has been protected from fire.

Field and Forest for Boys and Girls

By John Harvey Furbay



HAVE you ever looked upon the barren form of a favorite tree when it was covered with ice and snow, and as you gazed at it, wondered what was going on *in* the tree? Have you wondered whether or not trees are really alive in winter?

Trees are what we call "perennials." This means that they live for a number of years, and do not die at the end of each season as "annuals" do. They must be alive, then, during the winter. But not only are they merely alive; they are doing definite things.

During the winter, a tree can manufacture no food for itself, if it has no leaves. Trees which lose their leaves in the fall are called "deciduous trees," and those which retain them are called "evergreen trees." It is doubtful if the evergreens manufacture very much food in winter, and the deciduous trees make none. It is necessary that they draw upon the supplies which were laid away during the summer months.

Every living cell is at all times consuming food, breathing, and giving off waste. Trees store their food during the summer in their stems, limbs, trunks, and roots. It is carried about in the sap. Oxygen is constantly absorbed by the tree, and carbon dioxide is given off. This "breathing" results in the liberation of some heat, although not very much. In the spring the tree must draw further on its reserve food supply to open its buds and put out its new leaves. It is in these that food is manufactured.

Owners of maple trees bore holes in them and collect the sweet sap in the spring. This contains sugar which was stored by the tree the previous summer and was not all used during the winter.

I have often been asked: "Do trees grow in winter?" No. Their growing periods usually are the same as the periods when the leaves are green. In winter they rest and live economically on what they have laid away, waiting for the return of spring to continue their growth. It is in this way that the "growth rings" are formed, and when a tree is cut, these rings show the periods of growth and of rest which the tree has lived through.

The buds are inactive during the winter. Most of them were formed before the leaves were shed in the fall. They are protected now by cork-like scales, sometimes covered with a wax secreted by the tree. In this way they pass the cold days in snug comfort, resting till the warm days shall lure them to burst from their little houses and spring out as new green leaves.

The roots continue to absorb water unless the ground is frozen all about them. However, they usually have many roots which go down far below the frost line, and are always able to search for water. Since the whole tree is very inactive, it requires very little water compared with the active summer months. The tree is constantly losing water by evaporation, and if the roots are not able to secure as much water as is evaporated from the limbs and twigs, death is likely to result. In summer, one tree may lose nearly a thousand gallons of water in a single day by evaporation. In winter this amount may be reduced to a few pints or less.

The evergreens seem to be better adapted to winter life than do the other trees. A great evergreen forest once extended from the Great Lakes to Alaska, stretching from the Atlantic to the Pacific. Many small evergreen forests still mark this area. The foliage probably helps protect the tree against the winds. This may assist the tree in maintaining a living temperature.

In general, your favorite tree may be said to be sleeping in winter. It is alive, breathing, and slowly consuming its stored food supply; but it is not growing or manufacturing any food for itself. In these respects a tree is very similar to the woodchuck which is napping in some well-protected den. Both will become active again when warm weather returns.

Trees are beautiful in winter. What is more gorgeous than birches covered with ice, glistening in the crisp air of a bright winter morning? At a distance, they look like white tents scattered through the woods. They are bent to the ground, and their light bark can hardly be seen, making them look silver-plated. What a glaze! The frozen breath of Winter. They suggest the words of Bryant: "The groves were God's first temples."

· ❖ · FEEDING THE WINTER BIRDS · ❖ ·

IT is a bright, clear winter morning. Breakfast is ready. We open the window opposite the breakfast table, scatter a handful of cracked corn and wheat on the window-shelf, and replenish the supply of suet; then we sit down to enjoy our own breakfast. In a moment—almost before the window is closed—a smart "tche-day-day-day-day" announces the arrival of a troup of chickadees on the window-ledge. The "yank-yank" of a nuthatch warns the downy woodpecker that the suet has already been claimed. Soon our window-cafeteria is in full swing. Everyone

is eager to watch the performance. The winter breakfast is a delight, both to the birds outside and to us inside. The children can hardly be kept at the table. Just now a chickadee has a seed tucked under his feet, and he is hammering it open with his bill. There goes a thrifty nuthatch with several seeds which he will hide behind the bark of some nearby elm tree, so that he will not go hungry if the window-cafeteria proprietors should go out of business.

With a swoop, the old hairy woodpecker lands on a piece of suet and, after looking first on one side then the other to see if all is safe, he drives his hard bill into the fat. Then comes the tree sparrow. He settles down to gorge himself on the cracked wheat, and the children point out the single dark spot on his plain fluffy breast. The "chimp-chimp" of the song sparrow in the bushes, and the near by "jay-jay" of the blue jay announce that more guests will soon be arriving for the window breakfast party.

Have you ever experienced a breakfast like that? If you have not then you should not let another day pass without starting a window-table for the birds.

The best way to begin is to select the window or other spot which you wish to use. Build a little shelf which will extend out a foot or so. Then attach some branches to the shelf. Evergreen is best. Make it look like a little corner of the woods. Next attach pieces of suet in nearby trees which are in sight of the shelf, then scatter some grain on the shelf itself, and watch the result. The suet in the trees is to bring the birds within sight of the shelf. They may not come to the shelf for several days, but sooner or later they will find it. After that you can discontinue the suet in the trees, and attach it only to the branches on the window-shelf.

What do birds like to eat? Insect-eating birds, such as the woodpeckers, nuthatches, chickadees, kinglets, creepers, and jays, all like suet and any other fats. They are fond of beef suet, meat scraps, nut kernels, peanut butter, pancakes, and doughnuts. The grain-eating birds, such as the juncos, tree sparrows, song sparrows, purple finches, and grosbeaks, like all kinds of seeds. They will eat "chick-feed" or cracked corn, weed seed, sunflower seed, screenings from the mill, sweepings from the barn floor, and bread crumbs.

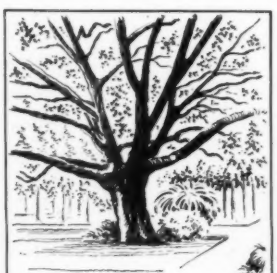
Quail must be fed on the ground. If they are seen in the brush near where you live, scatter some cracked corn there, and watch for their return. Then take them their breakfast every morning, and you will be repaid many times for your trouble. If the food is put out in the evening, the quail will come early in the morning and scratch about in the snow like hungry chickens. Pheasants may be fed in the same way.

Feeding-boxes may be put in trees or on buildings. Care should be taken to place these where cats will not attack the birds. Suet can be fastened to tree trunks. It is best to put it under a piece of wire netting.

The winter months would be quite lifeless without these cheerful feathered friends flitting about with their merry notes. They need food to keep their little bodies warm; and while we are supplying food for their bodies, they are supplying food for our souls.

FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW

No. 11---THE "DESOTO OAK"



THE DESOTO OAK, ONE OF THE MOST INTERESTING OF AMERICAN TREES, STANDS IN TAMPA BAY PARK IN FLORIDA. ACCORDING TO OLD INDIAN LEGENDS THE ADVENTUROUS SPANIARD, ON HIS FIRST TRIP TO THESE SHORES, RESTED IN THE SHADE OF THE GREAT TREE.

IN 1539 FERDINAND DESOTO WAS APPOINTED GOVERNOR OF THE PROVINCES OF FLORIDA AND CUBA, AND WITH ABOUT 1000 OF SPAIN'S MOST WEALTHY AND ADVENTUROUS YOUNG MEN SET OUT FOR THE CONQUEST OF THE NEW WORLD. ARRIVING ON THE SHORES OF ESPIRITU SANTO (HOLY GHOST) BAY HE PREPARED FOR FURTHER EXPLORATIONS. THERE ARE SAID TO HAVE BEEN CONFERENCES WITH THE INDIANS UNDER THIS TREE BEFORE DESOTO BEGAN THE MARCH WHICH LANDED HIM ON THE BANKS OF THE MISSISSIPPI.

THE DESOTO OAK IS ALSO OF MORE RECENT HISTORIC INTEREST. DURING THE WAR WITH SPAIN GENERAL NELSON A. MILES MADE HIS HEADQUARTERS FOR A TIME BENEATH THE OAK'S GREAT BRANCHES.

BLACK WALNUT

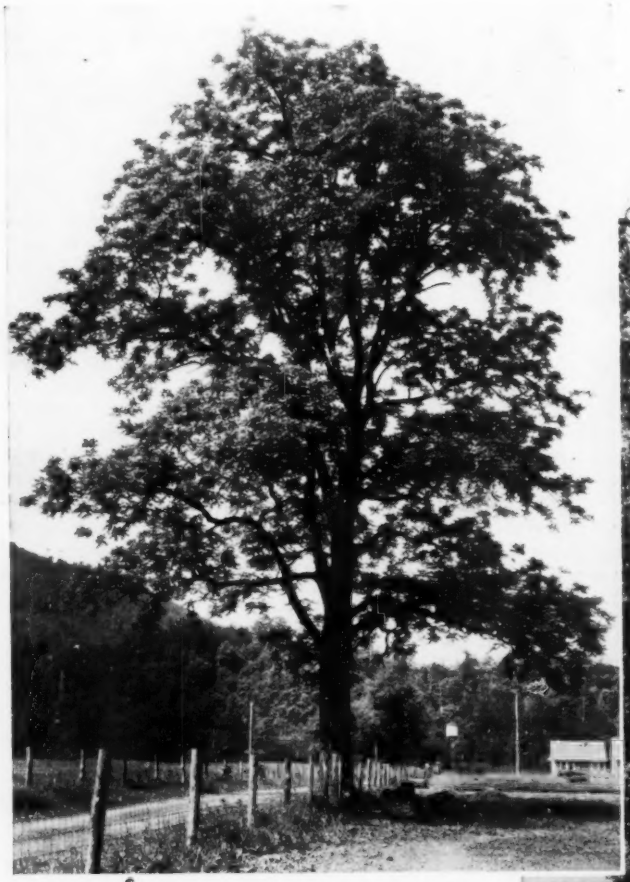
Juglans nigra, Linnaeus

BLACK Walnut is common to the eastern half of the United States, and southern Ontario. In the deep alluvial soils from Maryland, Pennsylvania, and Virginia, west into eastern Iowa and Missouri, trees have grown 150 feet high and six feet in diameter with clear lengths of fifty or sixty feet, while trees with a breast high diameter of three feet and 100 feet high are fairly common.

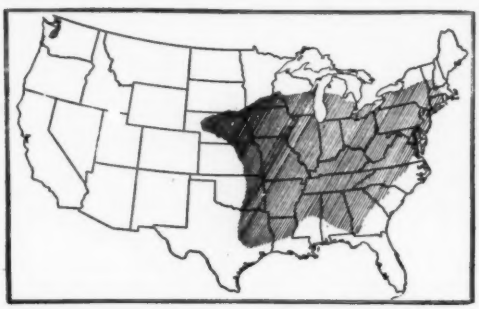
Juglans is a contraction of *Jovis glans,* a Latin name designating the nut or acorn of Jupiter, while *nigra* may refer to the black bark, the rich brown wood, or the dark outer shell of the nut. The Indians in central New York called it "Dent-soo-kwa-no-ne," or round nut.

Closely related to the butternut or white walnut, *Juglans cinerea,* it has two relatives in California and the southwest, and belongs to the same genus as the Persian walnut, whose nut is marketed as English Walnut, and lumber as Circassian Walnut.

The compound leaves are one or two feet long with fifteen to twenty-three lance shaped, sharply toothed leaflets attached to a slightly hairy stem. The globular, light green fruits are an inch and a half to three



Black walnut forms a round headed tree with relatively scant foliage that reveals the sturdy branches.



Natural range of black walnut in the United States.

The leaves begin to drop in the early fall exposing a sharply divided trunk and a sturdy frame work of heavy alternate branches. The dark brown, occasionally black bark is broken into prominent broad rounded ridges, and becomes two to three inches thick on the older trees.

inches in diameter, consisting of a thick pulpy hull surrounding a single nut whose hard, deeply grooved shell protects a kernel of unusual flavor. Each tree bears staminate or pollen bearing catkins on the previous year's growth, and pistillate flowers in groups of two to five at the ends of the new growth, during April or May.

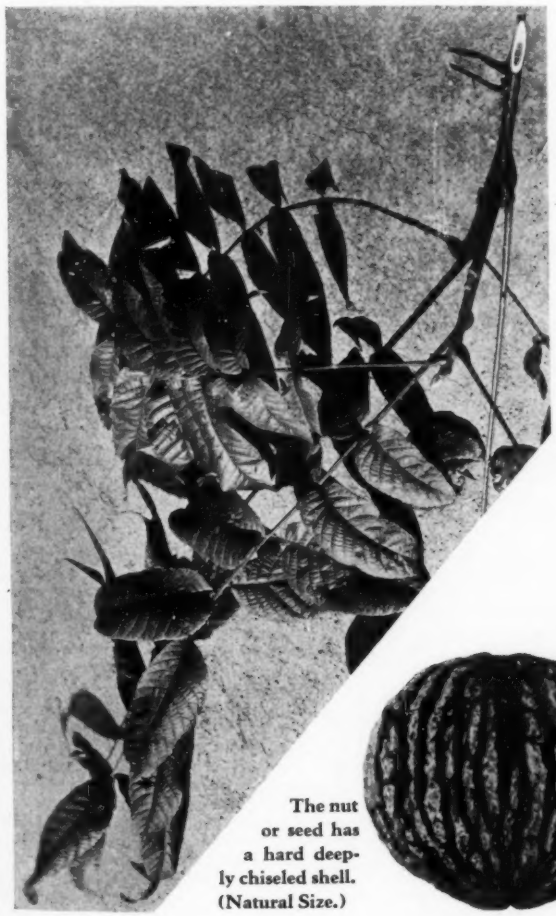
In winter, walnut trees may be distinguished by the sturdy crown, dark deeply grooved bark, stout twigs, and the large gray, downy, terminal bud. The smaller, downy side buds are alternate, and above a heart-shaped, three-lobed leaf scar, with three V-shaped bundle scars. The diaphrams of the chambered pith of black walnut are thin and pale buff while those of butternut are dark and coarse.

The soft brown, coarse grained, easily worked wood weighs about thirty-nine pounds to the cubic foot, when air dry. For many purposes it is stronger than white oak, and has been used since earliest American history for fine furniture and interior panels as has Persian walnut in the old world. It ranks as America's foremost cabinet wood. Walnut's ability to resist blows without splintering, to withstand strains under extremes of heat and cold, and the ease with which the finish may be restored, explains its wide acceptance for gun stocks and, during the World War, for airplane propellers. It is durable when used in contact with the soil.

Upper right: Two walnuts in their green husks maturing on the end of a current year's leafy twig.

Center: Pistillate or nut producing flowers, and a catkin of pollen bearing flowers in April or May.

Lower left: The compound leaves of black walnut have fifteen to twenty-three leaflets. A slanting cut across the twig reveals the chambered pith.



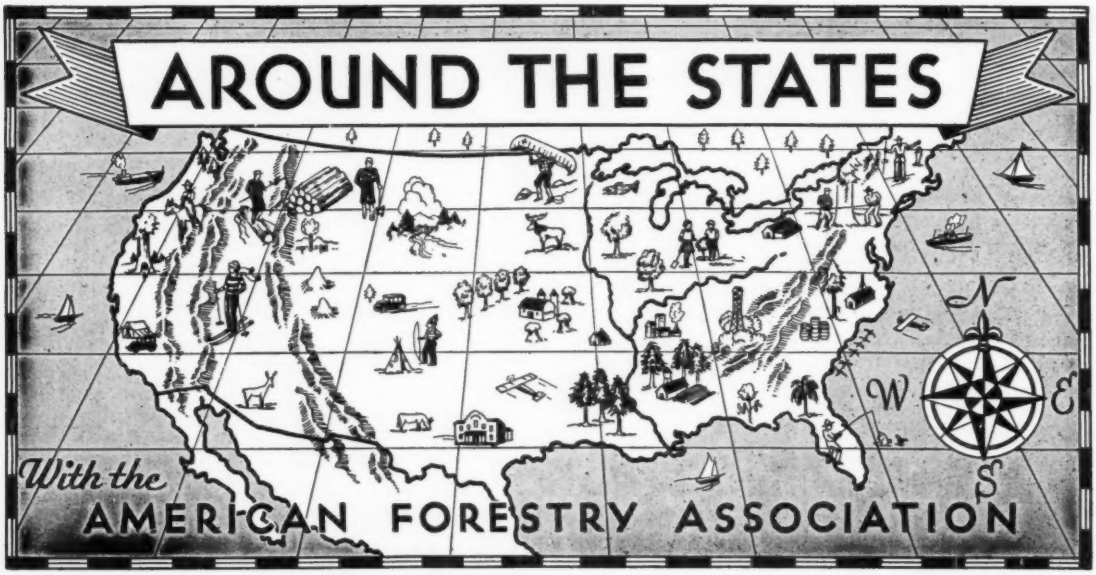
The nut or seed has a hard deeply chiseled shell. (Natural Size.)

Because the trees grow singly or in small groups, there are no reliable estimates of the present stand. The 1930 production was 36,305,000 board feet. Ohio produced 6,019,000 board feet, with Missouri, Indiana, Tennessee, Kentucky and Iowa following. Total production dropped to 9,155,000 board feet in 1932.

The nuts mature in a single season, during September and October, and frequently remain on the trees a week or two after the leaves have fallen. They are prized by squirrels. The kernels are used by confectioners, bakers and makers of ice cream, because the distinctive flavor and texture is not lost in cooking. The nuts may be planted during the autumn or husked and stored in a cool celler, embedded in sand or in a pit a foot or more underground, preparatory to being planted in early spring. They do best when spaced twenty-five to thirty feet apart, and prove satisfactory along roadsides and on lawns, because the comparatively light shade cast by the leaves interferes little with the growth of grass. Black walnut trees prospèr best in deep, rich, well drained soil where moisture is plentiful. They grow readily from seed and for two or three years are easily transplanted so that trees have been set out in every State.

Walnut is relatively resistant to fungus and insect attacks. Tent and walnut caterpillars are sometimes disfiguring but rarely kill the trees, and the leaves are subject to leaf spot diseases which are unsightly but not particularly harmful.

Under desirable conditions black walnut ranks among the rapid growing American hardwoods, attaining heights of thirty to forty feet and breast high diameters of five to nine inches in twenty years. It will stand little shade from other trees, and drops the lower branches early so as to develop a relatively high crown.



Wallace and Ickes Authorize Land Use Experiment

A national experiment in land use, devoted to studying the prevention of soil erosion, and providing for removal from cultivation of submarginal land instead of the average land required in the crop reduction programs, is being undertaken cooperatively by the Replacement Crops Section of the Agricultural Adjustment Administration and the Soil Erosion Service of the Department of the Interior. The experiment was authorized upon the recommendation of Secretary of Agriculture Wallace and Secretary of Interior Ickes. It will cover 2,000,000 acres of land in ten different regions.

Under the cooperative program in those areas where projects of the Soil Erosion Service are located, farmers who reduce acreage under crop reduction programs of the Agricultural Adjustment Administration may substitute acres of submarginal land for the average land that would be taken out of production under the terms of their contracts. They must substitute enough such submarginal land to equal the productivity of the average land which would be removed from production under their contracts.

Under such an arrangement, for instance, a farmer whose contract would require him to remove five acres of average land from production, would have the privilege of removing, instead, ten acres of submarginal land which was half as productive as his average land.

The Soil Erosion Service, of which H. H. Bennett is director, has chosen tentative locations for ten erosion prevention projects. Each project includes about 200,000 acres and covers an entire watershed. On these projects, the Soil Erosion Service will use every feasible method to prevent soil erosion and to demonstrate those uses of the land which best prevent erosion. Idle land that will exist in these areas as a result of the crop reduction programs of the Agricultural Adjustment Administration, provides excellent demonstration areas on which the farmers wish to cooperate, Mr. Bennett said. Farmers who substitute submarginal land for average land under their contracts, will be asked to use methods recommended by the Soil Erosion Service to prevent erosion of their land.

The tentative locations of the ten soil erosion prevention projects, already announced by the Soil Erosion Service, are: Upper Mississippi Valley, near LaCrosse, Wisconsin; north central Missouri and south central Iowa, near Bethany, Missouri; central Illinois, in McLean County; central Texas, near Temple; South Carolina Piedmont, near Spartanburg; Pacific Northwest in Palouse section, near Pullman, Washington; Oklahoma Red Plains, near Stillwater; Tennessee Valley; Kansas, near Mankato in Jewell County; and a large project including land in Arizona, New Mexico and Utah, known as the Navajo project.

John D. Coffman

J. D. Coffman to Direct Forestry Work in National Parks

Establishment of a branch of Forestry in the Office of National Parks, Buildings, and Reservations, in the Department of the Interior, was announced November 24 by Arno B. Cammerer, director of that bureau. John D. Coffman was appointed Chief Forester, with headquarters in Washington.

Mr. Coffman has had long experience in forest protection and administrative work. For the past five years he has been fire control expert of the National Park Service, with headquarters in Berkeley, California. For nineteen years previous to that he was a member of the United States Forest Service, the last twelve years of that time serving as supervisor of the California National Forest, now named the Mendocino National Forest. Mr. Coffman has been in Washington since early last April, assisting former Director Horace M. Albright and later Director Cammerer in the administration of the Emergency Conservation Program in the National Parks and Monuments.

A native of Pennsylvania, he began his college work at Cornell, changing to Yale when he decided upon forestry as his life work and graduating with the class of 1909 with the degree of Master of Forestry.

Protection of the forests from fire, destructive insects, and tree diseases is constantly becoming of more importance with the increasing use and development of the National Parks, Mr. Cammerer said. He pointed out that whereas a few years ago this need was largely confined to the National Parks of the West, demand for expert forest supervision now is even greater in the East, with the transfer to the Office of National Parks, Building, and Reservations of forty-six reservations east of the Mississippi from the War Department, and of the National Capital Parks System from the old Office of Public Buildings and Public Parks.

These, added to the eastern Acadia, Great Smoky Mountain, and Hot Springs National Parks, the Morristown and other National Historical Parks, influenced the establishment of the forestry branch of the Washington Office.

Road Beautification in Tennessee

The only commercial buildings to be permitted along highways constructed by the Tennessee Valley Authority will be automobile service stations, and billboards and "unsightly roadstands" will be prohibited.

Along both sides of these highways the right of way will be planted with native shrubs and trees, and every effort will be made to retain the natural beauty of the country, the Authority announces.

A contract has just been awarded for construction of a heavy-duty reinforced concrete highway from Coal Creek, Tennessee, to the west abutment of Norris Dam. This highway will be about five miles long with a right-of-way averaging 250 feet wide.

The highway will connect with the Norris Dam and a roadway will be built across the dam. This, in turn, will connect with another scenic highway which the Authority will build in cooperation with the local authorities of Knoxville, Tennessee.

Dwight B. Demeritt

Dwight B. Demeritt Heads Maine Forest School

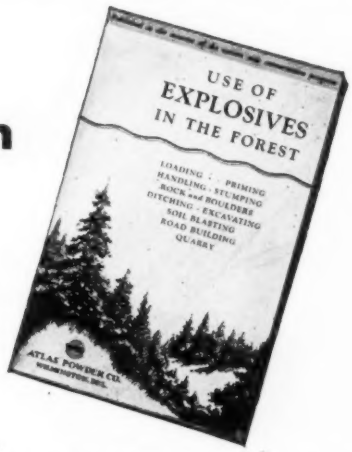
Dwight B. Demeritt, of the Iowa State College's Department of Forestry, has been appointed Professor of Forestry and head of the Forestry Department at the University of Maine, at Orono, to succeed Professor John M. Briscoe, who was drowned while swimming on August 4. Professor Demeritt will assume his new duties in the fall of 1934.

A graduate of the University of Maine, in 1922, and of the Yale Forest School, in 1923, he was Assistant Professor of Forestry at the University of Maine from 1923 to 1926, and Louisiana Extension Forester with the University of Louisiana until 1928. Later he served two years with the Forestry Department of Pennsylvania State College.

Forest Conference Postponed

Postponement of the second forestry conference, scheduled for December 14, to complete the formulation of a program of conservation practices under Article 10 of the Lumber Industry Code, has been announced by Secretary of Agriculture Henry A. Wallace. The new dates for the conference have been designated as January 25 and 26. The postponement is to give the regional divisions of the industry more time in which to discuss their conservation problems and to formulate specific recommendations of regional practices in woods operations.

One ATLAS Contribution to Forest Conservation



THE importance of explosives in forestry, lumbering, land clearing and conservation work is well established. But there is a genuine demand for greater knowledge of the proper use of explosives under the varying conditions that prevail.

To meet the need for a broader knowledge of the use of explosives in the forest, Atlas has prepared a brochure dealing with the subject. It is written from the layman's point of view and seeks to describe simply and clearly the points worth knowing in the practical use of explosives as practised by foresters.

With the rapid development of both the Civilian Conservation Corps program and the great public works projects, this book has been in wide demand for its concise, practical presentation of the fundamentals of sound explosives practise on conservation and reclamation work of all kinds.

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CONSERVATION PROMINENT IN FEDERAL EMERGENCY WORK

When Congress convenes in January, it will find conservation occupying a prominent place in the emergency work programs of the federal and state governments. Most prominent is the Civilian Conservation Corps now in its second six months period with almost fifteen hundred camps of two hundred men each in full operation. President Roosevelt, it is reported, has ready for Congress a recommendation that the activities of the Corps be continued for another year. The total estimated cost of the Corps for the first year has not been officially announced but some estimates place it at approximately $400,000,000. In addition to the 312,000 men directly benefited by the Corps official estimates place the number of dependents also benefiting at 1,500,000.

Acquisition of forest land in the East is another conservation activity that has been greatly speeded up by the emergency program. President Roosevelt's allocation of $20,000,000 of public works money already has added approximately two million acres to the Eastern National Forest system. Approximately $16,000,000 remain for expenditure, and it is expected that additional areas will be approved for purchase by the National Forest Reservation Commission when it meets in January.

Soil erosion control has received the recognition it merits through federal emergency funds with which the Soil Erosion Service, headed by H. H. Bennett, was created in the Department of the Interior. The initial allocation for the work of this service was $5,000,000. More recently an additional $5,000,000 has been made available and a series of erosion control projects are underway. These projects, officials estimate, will provide approximately fourteen thousand man-months of direct employment.

Normal activities of practically all the conservation bureaus of the Federal Government have been substantially expanded by allocations of emergency funds. The Forest Service has benefited to the extent of approximately $16,000,000 for general forest improvement and development and $26,000,000 for the construction of roads and trails. More recently it has received approximately $7,000,000 of Civil Works Funds to be expended between December 1, 1933 and February 15, 1934. This work is designed to give relief employment to 31,500 men and most of the projects are in the eastern and lake states, although work has been mapped out to give employment to approximately 8,000 men in California.

The Biological Survey has received approximately a million dollars for the improvement of various wild life reservations and for the development of conservation projects in Alaska. From National Recovery Act Funds the National Park Service received $3,205,000 for the building of National Park roads and trails, and from the new Civil Works Funds $3,600,000 for localized work in developing and improving the Government's whole system of parks and monuments.

The initial allotment of $300,000 to the Bureau of Fisheries for emergency work in reconditioning and repairing fish hatcheries and other fish conservation activities has been recently followed with an additional allotment of $230,000 for a survey of the physical and biological characteristics of streams and lakes in National Forests and Parks. This work is as a basis for increasing the fish producing capacity of public waters. Protection of game fish from destruction by irrigation projects in the Pacific Northwest, and correction of stream pollution in the Middle West are also included in the project.

Emergency funds have also come to the relief of the National Arboretum. With an emergency grant of $386.000, it has been possible to go forward with the acquisition of the land required and with labor supplied by men from one of the Civilian Conservation Corps camps in the District of Columbia, it has been possible already to clear a portion of the ground which will be occupied by the Arboretum.

TO CONDUCT STREAM IMPROVEMENT SURVEY

An allotment of $127,300 to the Bureau of Fisheries, Department of Commerce, for the survey and improvement of streams and lakes in various sections of the country has been announced by the Public Works Administration.

The purpose of the surveys is to provide a scientific basis for fish cultural operations and stocking of streams and to formulate a program to avoid duplication of efforts by Federal, State and private agencies.

It is anticipated that the surveys will result in a plan of stream and lake improvement which will increase the productivity of public waters and will determine the species, numbers and age of fish to be placed in the streams or lakes. With few exceptions, work will be done on land owned by the Government and in localities where development is badly needed. It is estimated that the project will provide about 750 man-months employment.

WILSON COMPTON TO HEAD NRA TRADE BODY

General Hugh S. Johnson on December 12 appointed Dr. Wilson Compton, secretary-manager of the National Lumber Manufacturers Association, as chief of the National Recovery Administration's Trade Association Division. He will direct plans for coordinating the facilities of the various trade associations with those of the Administration.

In taking over this new work Dr. Compton will continue as secretary-manager of the National Lumber Manufacturers Association and related forest products industry organizations. He will also continue his activities as a member of the Lumber Code Authority, as chairman of the Committee on Industrial Planning of the American Trade Association Executives, and with the Industrial Advisory Board, specializing on Trade Association and Code Authority matters.

"As a member of the Industrial Advisory Board, Dr. Compton has been consulted on many points in connection with code administration," according to the National Lumber Manufacturers Association. "Upon announcement of the compliance plans last October he made the criticism that they were an unnecessary denial of even the opportunity for industrial self-regulation. Many of his suggestions were accepted and a new code administration plan initiated. General Johnson then asked him to help put in effect the suggestions he had previously made, and Dr. Compton accepted the appointment for a period while the machinery and system of self-regulation under the codes is being fairly started."

PRESIDENT APPROVES EDUCATIONAL PROGRAM FOR C. C. C.

Individual Program of Instruction to Employ 1,500 Teachers

A comprehensive educational program for the Civilian Conservation Corps was approved by President Roosevelt on December 5. The plan, designed to improve the education of the 300,000 enrolled members and to enhance their prospects for securing permanent employment, calls for the development of an individual program of instruction for each of the 1,466 camps. General and vocational subjects will be provided although most of the instruction will be of an informal nature. The program, up to April 1, will cost approximately $1,200,000.

Application of the program will afford work possibilities for approximately 1,500 people. The plan calls for the placing of an educational adviser in each camp, a district adviser in each of the nine Army corps areas, and a director at Washington, D. C. In addition, one enrolled member will be selected from those already in camp and made an assistant to each camp adviser. Four government departments —Interior, Agriculture, Labor and War—will cooperate in establishing and operating the educational system.

While opportunity for education will be afforded all members of the Corps, it will not be mandatory. The available working hours on forestry projects—forty hours a week—will not be disturbed. The plan is to utilize hours other than normal working periods and periods of inclement weather for purposes of instruction.

The Interior Department, through the Office of Education, of which Dr. George F. Zook is Commissioner, will prepare the general program of instruction, appoint the camp educational advisers and recommend to the War Department the outlines of instruction, teaching procedures, and type of teaching materials for use in the camps. The program will be carried out under the immediate direction of the War Department. The commanding officers of the nine Army corps areas will be charged with the responsibility for carrying out the program. The camp commanders will organize the educational set-up for each camp and have charge of the camp program. The camp educational advisers, appointed by the Office of Education, will, under the supervision of the camp commanders, be responsible for organizing classes, discussions, lectures and individual instruction. They will be encouraged to secure supplementary educational facilities from schools, colleges and other organizations available to the camps.

An Advisory Committee representing the four cooperating government departments has been created to meet from time to time and make such recommendations to the Office of Education regarding the educational program as may be necessary. Although definite announcement was not made as to appointments to the Committee, it was learned through an unofficial channel that the following would be named: Dr. George F. Zook, Commissioner of Education, Department of the Interior, chairman; General Andrew Moses, assistant Chief of Staff, and Major J. J. Teter, representing the Adjutant General, United States Army, War Department; F. A. Silcox, Chief, United States Forest Service, Department of Agriculture; Dr. Harold C. Bryant, assistant director, Office of National Parks, Buildings and Reservations, Department of the Interior; W. Frank Persons, director, Employment Service, Department of Labor; and Charles H. Taylor, assistant director, Emergency Conservation Work. Robert Fechner, director of Emergency Conservation Work, will exercise general supervision over the whole educational administration.

Cooperating with the Office of Education in the selection and appointment of camp educational advisers are the directors of vocational education, agricultural extension and university extension of each state. These leaders, forming a committee of three, will prepare a list of eligible teachers for appointment by the Office of Education. The advisers will receive $165 a month, and must live in the work camps. Experience in vocational training and outdoor life will be sought in the selection of the camp leaders. The enrolled men to serve as assistants to the camp advisers will receive $45 a month.

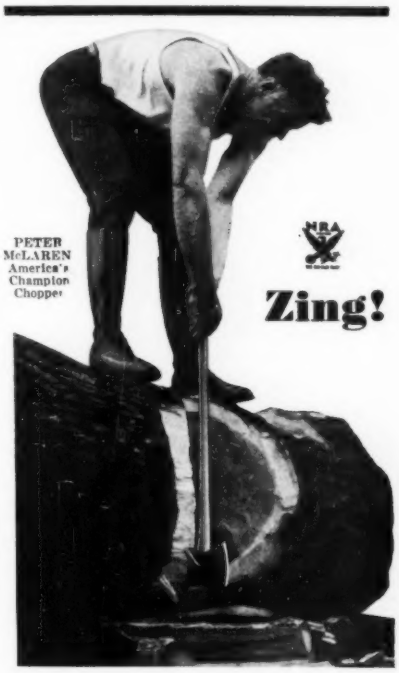
According to Dr. Zook, the camp advisers must be qualified to supervise all educational activities, and to develop a program suited to the needs and interests of individuals. They must secure supplementary educational facilities, must recommend to the camp commanders opportunities for coordinating the educational program with the work and recreational programs of the enrolled men, and must advise and counsel with the enrolled men on their education and future vocational adjustments.

In general, he pointed out, the motive back of the program embraces, first, the constructiveness of leisure time in camp, second, the adjustment of work to orient and assure each man's future vocation, and third, to help every enrolled man make the most constructive use of his capacities. The program will provide activities that develop powers of self-expression, self-entertainment, and self-culture in after years, he said. It will also develop an understanding of the conservation work being furthered by their activities.

"Already the enrolled men have benefitted from the opportunity to work and live in the open air," Dr. Zook said. "Wholesome recreation and excellent camp conditions have enabled the men to learn how to keep physically fit. Close contact with nature has given the young man from the city an entirely new conception of life. The effect of the present plan will be to organize these and further efforts into an educational program suited to the needs of the men."

For the most part, he said, methods of instruction will be informal in character. Wherever feasible, vocational work will be stressed, particularly relating to forestry and agriculture. Advice as to future vocational opportunities will be merged into the program, with opportunities for the development of interests along general lines.

Commenting on the program, Mr. Fechner said: "It is the hope of the President that the educational program, by emphasizing forestry, agriculture and like subjects will assist the men in readjusting themselves to a new mode of living—to country life instead of city life—so to assist them in improving themselves educationally and vocationally. A great number of the young men in these camps arrived at working age at a time when there were no jobs. Many of them have had meager educational advantages. We propose to give them a chance at an education and to furnish them vocational guidance which will aid them to earn a living"



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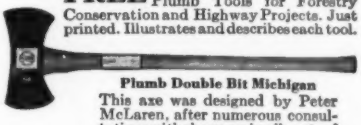

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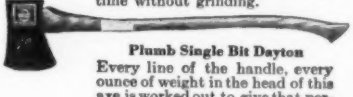

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Cooke Named Chairman of Mississippi Valley Commission

Appointment of Morris Llewellyan Cooke, of Philadelphia, as Chairman of the Mississippi Valley Committee of the Public Works Administration, has been announced by Public Works Administrator Harold L. Ickes.

Mr. Cooke brings to the PWA a large experience in many different lines of activity, he having been consulting engineer, newspaper man, and public official, both municipal and Federal. He was director of the Department of Public Works of Philadelphia from 1911 to 1915, was chairman of the Storage Section of the War Industries Board and executive assistant to the Chairman of the U. S. Shipping Board in 1918. Mr. Cooke is now engaged as a consulting engineer in management with offices in Philadelphia.

Born in Carlisle, Pennsylvania, in 1872, Mr. Cooke was graduated from Lehigh University in 1895. For four years he was employed as a newspaper reporter for the *Philadelphia Press*, the *Denver News* and the *New York Evening Telegram*.

During the Spanish American War he served as assistant engineer in the United States Navy. He practiced engineering until 1911 when he became Director of the Department of Public Works in Philadelphia. After serving with the War Industries Board, the Shipping Board and the Depot Board, Mr. Cooke made a study of collegiate administrative methods in the United States and Canada for the Carnegie Foundation.

Other members of the Mississippi Valley Committee, previously announced, are Charles H. Paul, of Dayton, Ohio; Herbert S. Crocker, of Denver, Colorado; Sherman Woodward, of Iowa City, Iowa; Henry S. Graves, of New Haven, Connecticut; Harlan H. Barrows, of Chicago, and Major General Edward M. Markham, Chief of Army Engineers. Donald L. Bower is secretary of the Committee.

The object of the Committee is to correlate and coordinate the various projects which have been recommended from time to time for the development of the Mississippi Valley and its tributaries. Problems of flood control, power, navigation, reforestation and soil erosion are being studied by the Committee. Hearings already have been held on a number of proposed projects.

Lake States Forestry Conference

To define the requirements of sawtimber forest management, protection and taxation necessary to perpetuate forest industries in the Lake States, a forestry conference was called December 1 and 2 by Governor Schmedeman, of Wisconsin, at Milwaukee. Conservation leaders, federal, state and private, attended.

The chief speakers, representing practically every phase of forest conservation in the Lake States, included S. T. Dana, dean of the School of Forestry and Conservation, University of Michigan, who spoke on public and private responsibility for sustained production; Raphael Zon, director of the Lake States Forest Experiment Station, who discussed the effect of minimum and maximum requirements necessary to obtain sustained production; and E. W. Tinker, regional forester, United States Forest Service, who spoke on the financial aspects of public management of sawtimber forests.

Paul D. Kelleter, director of the Wisconsin Department of Conservation, discussed the methods and cost of forest fire prevention and suppression; G. M. Conzet, state forester of Minnesota, spoke on the correlation of state and federal apportionment and responsibility; and Dr. Henry Schmitz, chief of the Division of Forestry, University of Minnesota, discussed the taxation of forest lands.

Man-Caused Fires Decrease in National Parks

"Acts of God" caused more fires in National Parks during the past season than did careless smokers, hitherto the greatest offenders. An analysis of fire causes made by the Office of National Parks, Buildings and Reservations of the Interior Department showed that lightning started ninety-four of the 223 blazes reported, while matches, cigarettes and cigars were blamed for seventy-one fires.

"Although there are nearly 5,400,000 acres of timber in the various National Parks and monuments," said Arno B. Cammerer, director, "only 2,382 acres were damaged by fire during the past season. Of these conflagrations, 159 were put out before they had spread beyond a quarter of an acre, and fifty-three others did not exceed the ten acre class. Of the total of 223, not a single one cost as high as $5,000 to extinguish, only three cost more than $2,000, and to suppress 190 of the fires it cost the Government less han $25 each."

Sequoia National Park, home of the largest and oldest trees in the world, suffered forty-two fires, half of them caused by lightning and all put under control before serious damage was suffered. Yellowstone experienced thirty-seven fires, more than half caused by lightning, and Yosemite thirty-five, a third of them started by lightning. Of the total of twenty-seven fires in Glacier National Park, no less than nineteen were due to lightning.

Washington Boys and Girls Receive Association Medals

Charles Wagner, of the Brookland School, and Marjorie Welsh, of the Madison School, sixth grade, Washington, D. C., pupils, were awarded The American Forestry Association bronze medal for the best individual forestry notebook submitted in the fourth annual contest for the District of Columbia and surrounding metropolitan areas in Maryland and Virginia. The Wheatley School was awarded the medal for the best single school room note-book.

The largest collection of acceptable notebooks was submitted by the Langdon School, which was presented with The American Forestry Association bronze plaque mounted on a block of black walnut.

More than 300 forestry notebooks were submitted in the contest which was sponsored by The American Forestry Association and the Divisions of Elementary Science of the District of Columbia Public Schools. Divisions were supervised by Miss Esther Scott and P. J. Rayford. Cooperating with the Divisions were the Art Departments, Visual Instruction Corps, Community Center Department, the Congress of Parents and Teachers, the Federation of Parent-Teacher Association, and the Home and School Association.

The books were assembled at the New National Museum on December 4, and remained on exhibit for a week. All were graded into first, second and third class groups, according to their merits, by a special committee made up of parents and teachers. Based on their decisions, The American Forestry Association bronze seals and blue, red or green ribbons were affixed to each note book, and the blue ribbon books turned over to three judges for selection of the winners. These final judges were Mrs. Charles D. Walcott, wife of the former director of the Smithsonian Institution; Dr. John C. Merriam, president of the Carnegie Institution of Washington, and Dr. Harold C. Bryant, assistant director of the National Park Service.

The medals were presented by Mrs. Walcott and a brief address was given by Senator Frederick C. Walcott, of Connecticut.

Pennsylvania to Survey Forests

A stock survey of the state forests of Pennsylvania has been recommended by Secretary Lewis E. Staley of the Department of Forests and Waters, to be carried on during the coming winter by members of the Civilian Conservation Corps.

The proposed survey will be in the nature of a gigantic inventory to find out the kind and amount of standing timber, and its rate of growth, on fifteen state forests, comprising about one million acres. Professor Geo. S. Perry, acting director of the Forest Research Institute, Mont Alto, has been named supervisor of the general survey. The large amount of field data will be centralized at Mont Alto for computation. This data will be used for determining the amount of wood and timber that may be cut from each forest each year so as not to remove more wood than is being grown annually.

Oregon Reports Incendiary Fires

Ninety-five per cent of the forest fires in Oregon during 1932 were man-caused, according to State Forester Lynn F. Cronemiller. Fires which burned a total of 334,376 acres destroyed timber, forest reproduction, logging machinery and other property valued at $2,076,680. In an effort to stamp out incendiarism eighty-two persons were arrested, and at the time of going to press seventy-two had been convicted.

During the year $423,515 was expended for protection under supervision of the State Forester, and for the patrol of 11,720,707 acres. Of this amount, timberland owners contributed $214,240 and the State $56,012. The remainder, totaling $151,262, was from Federal sources. In addition logging operators spent $41,630 in preventing and suppressing fires on their logging operations.

University of Wisconsin Arboretum

An arboretum of 430 acres on the outskirts of Madison, Wisconsin, bordering Lake Wingra, has been established by the University of Wisconsin with funds made available from the Tripp Estate. Professor George William Longenecker, of the Department of Horticulture, has been appointed Executive Director, and Professor Aldo Leopold, recently appointed director of wild life management and research, will cooperate to make the Arboretum an outdoor experiment laboratory for research in reforestation, wild life preservation, and conservation work, made possible by a grant of $8,000 from the Wisconsin Alumni Research Foundation.

The development of the land and the program of research will be under the direction of the University Arboretum Committee.

Dr. C. H. Herty With NRA

Appointment of Dr. Charles H. Herty, widely known chemist, as deputy administrator has been announced by the National Recovery Administration. He will have charge of codes for chemical industries.

A native of Georgia, Dr. Herty has, since 1931, served as director of the Division of Pulp Paper and Paper Research in the Georgia Department of Forestry. Previous to that he served as an industrial consultant in New York, and for many years was professor of chemistry at the University of North Carolina. He is a graduate of the University of Georgia and of Johns Hopkins University, and studied at the Universities of Berlin and Zurich.

His work in research on the pulp paper possibilities of the longleaf, slash and other species of pine in the South has attracted wide attention in recent years. At one time he served as a vice-president of The American Forestry Association.

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Medals Given C.C.C. Officers

Winners of the Army and Navy *Journal* gold medals for the best Civilian Conservation Corps companies in each of the nine Army Corps Areas, were decorated by General Douglas MacArthur, Chief of Staff, early in December. General MacArthur received the first medal, presented to him by General John J. Pershing.

The medals were presented by General MacArthur in the offices of Secretary of War Dern, after which the winners were banqueted. General Pershing and ranking officers of the service were present.

The officers decorated were: Captain Harry W. Bacon, U.S.M.C., C.C.C. Company 2205, Montpelier, Vermont, First Corps Area; Major Hermann C. Dempewolf, Infantry, U.S.A., C.C.C. Company 1205, Finger Lake, New York, Second Corps Area; Captain Fred B. Waters, C.A.C., U.S.A., C.C.C. Company 1391, Salem, Virginia, Third Corps Area; Major Alexander N. Stark, Jr., Infantry, U.S.A., C.C.C. Company 2414, Sumter, South Carolina, Fourth Corps Area; Captain Charles W. Mays, F.A., U.S.A., C.C.C. Company 1538, Pineville, West Virginia, Fifth Corps Area; Captain John P. Crehan, F.A., U.S.A., C.C.C. Company 647, Hayward, Wisconsin, Sixth Corps Area; Captain Herman J. Crigger, F.A., U.S.A., C.C.C. Company 1776, Lake Andes, South Dakota, Seventh Corps Area; Captain Frank LaRue, Infantry, U.S.A., C.C.C. Company 826, White River National Forest, Colorado, Eighth Corps Area; and Captain Thomas N. Stark, Infantry, U.S.A., C.C.C. Company 1921, Eugene, Oregon, Ninth Corps Area.

Funds for Skyline Drive

The first allotment of the $16,000,000 to be advanced by the Public Works Administration for construction of the extension of Skyline Drive, to connect the Great Smoky National Park, in Tennessee and North Carolina, with the Shenandoah National Park, in Virginia, has been made with the award of $4,000,000.

In announcing the allotment Secretary of the Interior Ickes said that the exact route of the parkway and drive has not been determined. Preliminary plans contemplate that the drive, in general, will follow as nearly as possible the summit of the mountain chain connecting the two parks.

Selfridge Appointed NRA Deputy Administrator

Announcement has been made of the appointment of E. A. Selfridge as a deputy administrator of the National Recovery Act assigned to Division 2, in charge of codes for lumber and lumber products industries. He succeeds Thomas M. Glasgow, who resigned in December.

Mr. Selfridge, who has been serving as an assistant deputy administrator, is a native of California and a graduate of the University of California and the Columbia School of Law. In 1901 he became president of the Northwestern Redwood Company, and later was instrumental in forming the California Redwood Association and the Redwood Sales Company, embracing the entire redwood industry in California.

In 1926 Mr. Selfridge was appointed a Lumber Trade Commissioner under the Department of Commerce and was assigned to Tokio, Japan. He was transferred to London as Lumber Trade Commissioner in 1927 and in 1929 became assistant chief, Lumber Division, Department of Commerce, in charge of Foreign Trade Activities.

1,500,000 to Be Benefited This Winter by C.C.C.

Robert Fechner, director of Emergency Conservation Work, has announced that statistics received at his office from the War Department and the directors of selection from twenty-six states indicate that a minimum of 1,500,000 needy persons will be benefited directly this winter through the payment of cash allotments by members of the Civilian Conservation Corps to their dependents. He estimated that on the average 300,000 families would receive C.C.C. checks each month. Data collected during the first six months' enrollment period indicated, he said, that the average family receiving C.C.C. funds consisted of five persons including the member of the family in the forest camp.

The cash allotments which will go to the families of C.C.C. members during the winter period will be taken from the $30 cash allowances earned each month by the men in the forest camps. The cash allotments assigned to needy dependents by the C.C.C. men are expected to aggregate more than $35,000,000 during the five months of November, December, January, February and March.

Official figures compiled in the office of Major General Frederick W. Coleman, Army Chief of Finance, disclose that during the first six months' enrollment period, a total of $31,398,492 was paid out of Emergency Conservation Work funds to the dependents of the C.C.C. enrolled men and the enrolled workers in the Indian forest camps. This sum represented the big bulk of the pay earned by the C.C.C. members during the time they worked in the nation's forests and park lands. All told the War Department paid out in the form of cash allowances a total of $37,678,191. Of this amount $31,398,492 went direct to the families of the men and the balance of $6,279,699 to the men themselves.

In commenting on the Corps, Mr. Fechner also announced that more than 580,000 men have been transported by the railroads of the United States since the first enrollment began last spring. This transportation figure includes not only the number of men who were transported from their homes to points of enrollment and thence to various camps but also of those who were moved to winter locations or back home during October. The entire task was accomplished without accident.

Expenditures for transportation up to September 30 equalled $6,260,920 for passenger movement and $2,552,236 for freight, making a total of $8,813,157. Since September 30, additional expenditures have been made amounting to approximately $2,000,000. Exact figures showing the transportation figures for the past three months are not yet available.

During the first enrollment period, 64,196 men traveled long distances between corps areas, often completely across the country. Such trips were handled by the Quartermaster Corps in Washington. Of the 64,196 men thus transported, 55,130 were sent from the East to West coast. It required 211 trains, 1,605 sleepers and 705 baggage cars to carry equipment for the over-night trips directed by the Quartermaster Corps.

In October, 52,700 men were moved in 212 trains from the West to the South and East and 43,600 in 114 trains were moved from the East to the West and Southwest.

Each train carried an Army physician and, for instances in which the trip was longer than one day, a temporary kitchen and supplies. In addition to the railroad mileage run-up, there was considerable transportation from station points to camps in trucks and busses.

THE ORIGINAL LYNCHING TREE

By HAVILAH BABCOCK

"A hundred yards West stands a walnut tree under which Colonel Charles Lynch, William Preston, Robert Adams, Jr., James Calloway and others held an informal court for the trial of Tories and criminals, 1780. From this rude justice the term 'Lynch law' was evolved."

SO reads the inscription on a marker standing on a beautiful old plantation near Altavista, Virginia. A short distance away towers a giant black walnut tree from whose widespreading branches Colonel John Lynch and his compatriots more than a century and a half ago used to suspend British sympathizers and malefactors to be whipped, and mayhap tarred and feathered like old Skipper Ireson immortalized by John Greenleaf Whittier. Although gnarled and weatherbeaten, the rugged walnut is still green, and until a few years ago produced a bountiful crop of nuts. Identified as this picturesque tree is with "Lynch law," a unique American phrase that has become part and parcel of our language and, unfortunately, of our life, it is entitled to a place in the arbor of historical American trees.

On the spacious veranda of the old Colonial estate Colonel Lynch and other patriots, constituting themselves both judge and jury, meted out summary and often arbitrary punishment to over-zealous Tories and other sowers of dissension and discord, and to such neighborhood nuisances as horse thieves and pilferers. It is perhaps needless to relate that the fame of this singular court traveled afar and exerted a wholesome influence throughout the section.

It is interesting to note, however, that there is no reason to believe that any such malefactor was actually lynched or executed by Colonel Lynch, so that this magnificent old walnut is in no wise responsible for the dastardly and lawless procedure the phrase "Lynch law" connotes today. Furthermore, Colonel Lynch was not an irresponsible lawbreaker, but a staunch patriot who, in the inadequacy of local court machinery, set up his own emergency tribunal and rendered yeoman service to the American cause. After the unrest incident to the Revolution had subsided, Colonel Lynch was officially exonerated by the Virginia House of Burgesses and thanked as a defender of the faith.

Lynch law has many English prototypes, such as Jersey justice, Jedwood justice, and Lidford law, where they would, according to tradition,

First hang and draw
Then hear the cause by Lidford law.

Although other Southern states have at various times claimed the doubtful distinction of giving origin to the Lynch law, the preponderance of evidence favors this site and tree, and the Virginia Conservation and Development Commission erected the present marker in 1929. A direct descendant of the original Judge Lynch now occupies the old plantation.

Though gnarled and weather-beaten, the Lynch Tree, — a rugged old walnut, is still green.

The Lynch Tree is just one of many famous and historic trees in the Old Dominion State. At Williamsburg there is the old Martha Custis Yew, planted by Martha Custis Washington while she was still the wife of Daniel Parke Custis. There is the Clay Oak at Ashland, to which Henry Clay, the "mill boy of the slashes," frequently tied his horse; there is the famous Washington horse-chestnut tree at Fredericksburg, the last of thirteen trees set out by George Washington in honor of the thirteen original colonies; there is the Lee Apple Tree at Appomatox, under which Lee and Grant signed the articles of surrender in 1865.

Salem has its Andrew Jackson Oak, Lexington its Old Guard Tree, Front Royal its Royal Oak. There is the Monroe Walnut Tree at Charlottesville and the John Pemberton Oak at Bristol. Nor should one overlook the great trees at Mount Vernon, the Thomas Jefferson trees at Charlottesville, or the Baylor Oaks at Newmarket. There are many others, all keeping alive the history of Virginia—the Jamestown Sycamore, the Lone Sentinel Cypress, the mulberry trees at Williamsburg, and the Grave Tree at Taswell, where James Moore, a pioneer, and his two little children were massacred by the Shawnee Indians in 1786.

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List Price, $7.50
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GAME MANAGEMENT, by Aldo Leopold. The most advanced treatment of wild life conservation yet published. The author strikes boldly into the field of biological factors, and blazes a trail of scientific technique destined to be the highway along which game conservation will move forward to greater achievement.

List Price, $5.00
Price to Members, $4.50

FIGHTING THE INSECTS, by L. O. Howard. Recording the life of the scientist who with all of his responsibilities took time to enjoy many of the finer things of life.

List Price, $2.50
Price to Members, $2.25

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BOOK SERVICE

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FORESTRY IN CONGRESS

By G. H. COLLINGWOOD

Although administrative leaders are said to be planning upon a brief session of Congress beginning January 3, a number of important conservation questions will press for settlement. Among these are:

Continuation of the Civilian Conservation Corps for a second year. President Roosevelt is said to have ready for the approval of Congress a recommendation to this effect.

A measure designed to formalize and establish as federal policy the far-reaching conservation program as incorporated in the Copeland Report, prepared by the Forest Service a year ago in response to a congressional resolution introduced by Senator Copeland of New York. In view of the fact that Congress asked for these recommendations, it is certain that legislation to put them into effect will be introduced in Congress, although it is not known at this time the members of Congress who will sponsor the bills in the two houses. This legislation unquestionably will be the most important and interesting conservation phase of the new Congress, because, if passed, it will represent the most inclusive and at the same time the most extensive handling of the forest situation in the history of American conservation. The scope of the Copeland Report which was published under the title "A National Plan for American Forestry" was fully reviewed in the May, 1933, issue of AMERICAN FORESTS, and The American Forestry Association through action by its Board of Directors has approved the recommended program in principle with the reservation that the Association will exercise independent judgment regarding specified features of the program as they may be presented to Congress and the public for discussion or action.

Restoration of funds needed to maintain the national system of cooperative fire protection under the Clarke-McNary Act. The pressure of economy upon regular appropriations the past few years has reduced the Federal Government's contribution to this work approximately $600,000, with the result that in some important forest regions adequate fire prevention is threatened with a breakdown which exposes to destruction not only natural forest resources but much of the improvement and development work being performed with emergency funds. While the Civilian Conservation Corps has helped to fill the breach in fighting forest fires after they started, it has not replaced the heavy loss to the fire detection system. The deep cut in normal fire protection funds has resulted in the dismissal of hundreds of trained forest fire protectors in the several states, upon whom the efficient handling of forest fires has rested.

Passage of legislation creating a conservation policy for the Public Domain. This is a long standing question, and was before the last session of Congress in the form of a bill, H. R. 2835, sponsored by Representative Taylor of Colorado, who is Chairman of the Subcommittee on Appropriations for the Department of the Interior. The Taylor bill has received the endorsement of The American Forestry Association and other conservation agencies. Its early passage is being urged not only because of the constant deterioration taking place in the Public Domain but in order to protect the erosion control and other public works activities now going forward on public lands. Pressure during the last days of Congress prevented action but the bill carries over to the second session, and Chairman DeRouen of the House Committee on Public Lands has given assurance that the bill will receive consideration at the second session.

Legislation designed to correct and modernize United States mining laws so as to protect the public against fraudulent preempting of choice recreational areas in the National Forests and the Public Domain. This situation has been publicized by The American Forestry Association which is demanding that remedial action by Congress be taken at an early date.

Passage of the "hunting-stamp" bill, H. R. 5632, sponsored by Representative Kleberg, designed to provide ways and means to acquire, maintain and develop an adequate system of migratory bird sanctuaries and to more effectively enforce the migratory bird treaty act. The bill would provide the necessary fund by imposing a stamp license of $1.00 on each permit to hunt migratory birds. The measure is being vigorously urged by the American Game Association and practically all other wild life organizations.

Legislation to create an Everglades National Park in the southern extremity of Florida peninsula. This is another legislative question of long standing and one which almost reached a successful conclusion at the last session, when the Fletcher bill, S. 324, was passed by the Senate on May 29, 1933. Friends of the measure are planning an aggressive campaign to secure passage of the bill by the House at the coming session. The American Forestry Association has approved creation of an Everglades Park provided its plan, development and administration are based on maintaining the primitive conditions of plant and animal life in the Everglades region.

Of vital importance to the conservation work of the several bureaus and departments will be the attitude of Congress in respect to regular appropriations for the next fiscal year. Regular appropriations for all the bureaus have received a heavy set back through the depression period and whether the appropriations for the new year will be further trimmed or gradually restored to old levels is a question for speculation. Present indications are that further cuts may be made in view of the indicated policy of the Bureau of the Budget to cut all appropriations to the bone in order to balance the budget. If this policy is carried through or if appropriations are maintained at the current rate, which in the case of the Forest Service for example is more than forty per cent below normal, and during the course of the next year emergency funds are discontinued, conservation will be subjected to a heavy let down in point of current activities.

Game Conference Program

Game breeding, wild life research, the waterfowl situation and law enforcement will be the featured discussions at the 20th American Game Conference at New York, January 22, 23 and 24.

The first day of the conference will be devoted to two separate meetings, one on game breeding and the other on wild life research. The second day will be reserved for a full discussion of the waterfowl situation and ways and means to provide more breeding grounds and refuges. Among other things, the need for better law enforcement, the inroads of the crow, and whether further shooting regulations and restrictions are desirable will be discussed.

The general discussions scheduled for the third day include practical game management demonstrations, the utilization of scientific findings, land use planning and the game crop, and progress reports on farmer-sportsmen cooperative projects.

Forestry Questions Submitted to The American Forestry Association, 1713 K St., N. W., Washington, D. C., Will be Answered in this Column. A Self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.

QUESTION: We have a large chestnut oak from which an evil smelling slimy liquid has been oozing for the past two years. How can it be stopped?—T. H., Connecticut.

ANSWER: Dr. Rush P. Marshall, Associate Pathologist with the United States Department of Agriculture, reports that a suitable treatment for such slime flux condition is difficult even after the tree has been carefully diagnosed in the field, and that advice given for a tree not examined may be worthless. Because leakage has persisted for two years, he suggests that the cause be sought in two places: (1) The parts above the pruning cut should be carefully inspected to make sure that no open knots or disease crotches admit water which drains down through the wood from above. If such defects are found they should be remedied. (2) The lower part of the bole should be suspected as being filled with fermented liquid. If such be found the case, the tree can be drained by boring an auger hole at the base. The hole should be sunk at least to the axis of the bole and bored in a slightly upward direction. A piece of pipe about two feet in length and fitted for driving should then be driven into the auger hole. The projecting pipe will aid in carrying away the fermented liquid, which might otherwise kill back the bark below the drain. An increment borer such as is used by foresters will help in making this diagnosis.

QUESTION: I am interested in the Appalachian Trail that extends from Maine to Georgia. It is difficult to obtain information regarding its exact route, its passability and its ease of location. It is my desire to hike over at least the half from Pennsylvania to Georgia this winter, and the other half next summer. Can you supply me with any information concerning this trail or others in the Eastern United States?—W. B. A., Pennsylvania.

ANSWER: Guides giving detailed descriptions and maps of the entire Appalachian Trail from Maine to Georgia are published by Carney-Spicer Company, of Boston, Massachusetts, at fifty cents to $1.50 a copy. Recently the guide to the Appalachian Trail in New England, costing fifty cents, was reviewed in AMERICAN FORESTS. It is highly desirable that a hiker following the trail have one of these books covering the area in which he is traveling in his pocket or knapsack.

The trip from Pennsylvania to Georgia can be made in the fall or winter but you must expect snow and severe weather all the way through because of the high elevation. October and early November would be a satisfactory time, provided you have heavy clothing.

California Receives School Forest

Twenty-six hundred acres of forest land near Placerville on the Georgetown Divide, in El Dorado County, California, has been given the University of California to be used as a school forest. The land was presented to the University by John W. Blodgett, of Grand Rapids, Michigan, president of the Michigan-California Lumber Company.

Most of the tract is covered with second growth forest which the company has been protecting for many years. Soil and climate combine to make growing conditions excellent. According to Professor Walter Mulford, of the Division of Forestry at the University, there is little fire hazard and with the cooperation of the United States Forest Service and the California Division of Forestry, protection will be afforded without expense to the University. The land is within the boundaries of the El Dorado National Forest and represents the second largest school forest in the United States.

Wisconsin National Forest Units Consolidated

Consolidation of six National Forest Units in Wisconsin, forming an enlarged Nicolet National Forest and creating a new forest to be called the Chequamegon National Forest, has been announced by the Forest Service. Both of these National Forests lie in the northern part of the State. Their combined gross area is 1,214,450 acres, of which more than fifty-one per cent is already owned by the government. It is estimated that 400,000 acres of the remaining unacquired area within the boundaries is purchasable. Federal acquisition of some of it is indicated in the purchase program now under way.

The greater part of the new forests is cut-over land bearing some second-growth timber or in need of reforestation. There is also some virgin timber. About 2,400 acres is reserved public land. The six units designated for consolidations have all been established within the last five years, the Oconto, Chequamegon, and Mondeaux having been set apart by the National Forest Reservation Commission March 10, 1932, and the others December 12, 1928. The former Nicolet National Forest was proclaimed March 2, 1933, and was formed by consolidating the Flambeau, Argonne, and Moquah purchase units.

The new Nicolet National Forest changes these boundaries and includes the Argonne unit in Vilas, Oneida and Forest Counties; the Oconto unit in Oconto and Langlade Counties; and the Mondeaux unit in Taylor County. The new forest will contain 584,174 acres gross area. Headquarters will be at Rhinelander, Wisconsin. The forest is named for Jean Nicolet, famous French explorer.

Indiana Organizes Against Fire

Organization of forest fire protective associations in communities where new steel fire towers have been erected recently, is now in progress in Indiana, according to Virgil M. Simmons, Commissioner of the Department of Conservation.

With the completion of these new local units Indiana will have nearly half of the 3,200,000 acres of forest lands under protection before the forest fire season of 1934. The new towers have been erected in Pike, Greene, Lawrence, Jefferson and Harrison Counties, each serving a territory with a ten-mile radius.

A series of more than 150 educational meetings, showing the losses from forest fire and methods of combating the fires, has been scheduled for fifteen southern Indiana counties during the winter months. Through these meetings the local protective associations will be formed.

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A FOREST SAVED . .
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Mountain State Forest Festival

By H. N. Wheeler

The Mountain State Forest Festival held each year at Elkins, West Virginia, is one of the outstanding exhibitions in this country, and the only one devoted to forest activities. The 1933 Fesitval, held October 5, 6, and 7, surpassed all previous displays. It held the keen interest of the visiting thousands and local citizens to the last act.

The parade in the morning of October 5 of beautifully costumed school children and citizens illustrated very well the development of the schools from the early primitive up to the present high class school, with its diversified educational program.

The chief event of the afternoon was the coronation of Queen Silvia IV, on the Campus of Davis & Elkins College. From the fanfare of the trumpeters through to the presentation of the fruits of forest and field to Mother Nature the audience, seated on the sloping hillside facing the coronation platform, was treated to a most colorful and delightful spectacle.

The Queen in regal costume was preceded by twenty-eight princesses who marched down the hill between two columns of cadets. The coronation ceremony, conducted by Governor Kump, was most impressive. After the coronation, Queen Silvia reviewed the pageant in which gayly dressed boys and girls presented Mother Nature with products of field and forest.

On October 6 a picturesque riding tournament of medieval origin was held on one part of the College Campus while wood chopping and sawing contests were staged on the main platform. Robert Fechner, director of Emergency Conservation work, gave an address before a large audience, discussing mainly the work of the Civilian Conservation Corps, and what it meant to the country. In the afternoon 60,000 people viewed the Forest Trails parade through the streets of Elkins. There were a number of floats, many of them made at C.C.C. camps, of actual forest regions. There were bands, school groups, citizens, and several companies of C.C.C. boys with axes over their shoulders.

First prize for the best float went to the United States Forest Service. It depicted a forest before and after fire, and was most convincing with the burned part still burning and smouldering.

Allison to Direct Erosion Work

Dr. Robert V. Allison, soils specialist, who has been in charge of the Florida Everglades Station, has been temporarily appointed senior soil conservationist in the Bureau of Chemistry and Soils to take over the planning and directing of investigations at the ten erosion stations of the United States Department of Agriculture located throughout the country. Dr. Allison will take charge of this work during the absence of H. H. Bennett, who has been loaned to the Department of the Interior to direct a large-scale demonstrational program under allotment of $5,000,000 from the Public Works Administration.

Dr. Allison received his B. S. degree from Purdue University in 1920, his Ph. D. from Rutgers in 1923, and in addition has carried on post-doctorate research in biophysics at Rothamsted Experiment Station, England. He was employed in connection with the cereal disease survey in Indiana, field control work in Illinois, and the barberry eradication work in Ohio, and from 1924 to 1926 he was with the Tropical Plant Research Foundation as chemist and biologist in its Cuban studies.

AMONG THE CURRENT PUBLICATIONS

The Makiling Echo, for April, 1933, published quarterly by the Department of Agriculture and Natural Resources at Manila, Philippine Islands, contains among the several articles one on the cultivation of Quinine in the Philippines by Gil M. Altamirano, one on the Chemical Control of Sap Stain and Mold in Green Lumber and Logs, by Ricardo Buhay, and another on "Wild Animal Life Conservation," by Felix Franco.

Some Factors Underlying Forest Fire Insurance in Massachusetts by C. C. Averill and L. M. Frost. Bulletin No. 17 of the Harvard Forest, Petersham, Massachusetts. Although based upon a limited number of forest tracts, the study attempts to disprove the general opinion that timberlands are subject to unusually high loss costs and to such high fire risks that insurance is impossible.

The Problems of "Sub-Marginal" Areas, and Desirable Adjustments With Particular Reference to Public Acquisition of Land. Report No. 6 of the National Land-use Planning Committee and the National Advisory and Legislative Committee on Land Use. For sale, Superintendent of Documents, Washington, D. C. 5c. Under the heading "Scope of Public Acquisition of Forest Lands," this reports,—"Considering the diversity of objectives in public acquisition and the unstable condition of our forest industry as compared with most other civilized countries an estimate of from 75 to 90 million acres east of the Rockies yet to be acquired by the various governmental agencies—Federal, State, and local—appears to be a reasonable objective."

New York State Parks, distributed free through the State Council of Parks, State Office Building, Albany. This booklet is prepared as a guide to the State park system, consisting of sixty-five parks of varied size and character. It describes the park regions and information is given as to the facilities at each park, directions to reach each, the natural wonders, scenic beauties or recreational facilities and the historical significance attached to each park.

State Distribution of Returns From Banded Ducks, Fourth Paper, by Frederick C. Lincoln. Reprinted from "Bird-Banding." The fourth in a series of papers intended to acquaint bird-students, sportsmen, conservation officials, and others with information being obtained by the Biological Survey relative to the movements of migratory waterfowl through the banding of such birds at various points throughout the Continent.

Mushrooms of the Chicago Region, by V. O. Graham. Published by The Chicago Academy of Sciences, Lincoln Park, Chicago, Illinois. Price twenty-five cents.

Birds of the Region of Point Barrow, Alaska, by Alfred M. Bailey, Charles D. Brower and Louis B. Bishop. Published by The Chicago Academy of Sciences, Lincoln Park, Chicago, Illinois. Price twenty-five cents.

Forestry in the State-Wide Water Plan. Report of the Governor's Honorary Watershed Committee, issued by the State California Division of Forestry.

Book Reviews

THE PEOPLE'S FORESTS, by Robert Marshall. Published by Harrison Smith and Robert Haas, New York. 233 pages. Price $2.00.

Throughout the first third of the book, the reader is impressed with the clarity with which Mr. Marshall presents forest facts as they relate to the United States. But when, on page 103, he begins to aim his guns against private ownership of timberlands, the reader finds himself forced to question the author's charge htat private forest ownership under the capitalistic system is a failure and utlimately the public must administer at least 562 million acres of forests.

The depression, according to Mr. Marshall, in virtually wrecking the lumber industry, has been the greatest godsend American forests have known, for he would have it prove that private forestry, even when aided by government subsidy, has failed to safeguard public welfare.

"The only way that private forestry could be a success would be for the government to pay practically all the expenses of starting, developing, and protecting the forests, leaving to the owners only the harvesting of the profit." And in a later chapter he declares, "It is desirable that the government should not only own but also operate its timberlands."

However desirable governmental operation may be, Mr. Marshall admits it will have to take second place to the stupendous task of acquiring in public ownership some 240,000,000 acres of forest land. Rather regretfully, it would seem, he comes to the conclusion that these lands must be purchased, for "with the country functioning on a capitalistic basis it is out of the question to consider confiscation as a feasible means of acquiring public forests. If we plan to nationalize our forests while the country as a whole is operating under a capitalistic system, we shall have to pay for them."

Practically the only timberlands not included in this plan for the People's Forests are some 80,000,000 acres out of the 127,000,000 acres of farm woodlands, because farmers depend on them for fuel. To deprive the farmers of the small income from them would disrupt agriculture by driving many off their lands.

In addition to the proposal that 240,000,000 acres be purchased, the author refers to statistics reported in "The Copeland Report" and elsewhere to estimate that "about 161,000,000 acres will come back to public ownership within the next few years through tax delinquency." Regardless of tax delinquent lands, Mr. Marshall estimates a total of $1,017,000,000 might have to be spent by the government to nationalize the bulk of its forest lands. That this is twice the cost of the Panama Canal and about half the amount which has been spent on river and harbor improvements does not dwarf the size of the proposed undertaking.

Summing it up in a final chapter entitled "A National Program," Mr. Marshall visions a Forest Service administering public forests aggregating 562,000,000 acres with a maximum annual outlay of $67,000,000, together with a research program to cost about $8,500,000 a year. Thus, the annual expenditures for management, regulation and research would amount to about $75,000,000. Most of this would go into wages, thousands would be employed, and after "the early steps of rehabilitation are consummated, the forests will yield a far higher revenue than the expense of administering them."—G. H. C.

Supervisor Scott Transferred to Washington

James E. Scott, for the past five years Forest Supervisor of the White Mountain and Green Mountain National Forest, will be transferred to Washington on January 1 as assistant to Regional Forester Joseph C. Kircher. In his new capacity, Mr. Scott will have charge of the coordination of personnel and financial matters throughout the entire eastern region. His transfer, it was announced, at the Forest Service, is occasioned by the growing magnitude and importance of forest work in the East, and Mr. Scott was selected because of his outstanding qualifications in forest administration.

M. A. Mattoon, Supervisor of the Pisgah National Forest at Asheville, North Carolina, has been selected to take Mr. Scott's place as Supervisor of the White Mountain and Green Mountain National Forest. Mr. Mattoon's place at Asheville will be filled by the transfer of William P. Kramer, who served for a number of years as Deputy Supervisor of the Pisgah National Forest, but who has been Supervisor of the Cumberland National Forest in Kentucky since last July.

Chapman Heads Society of American Foresters

H. H. Chapman, professor of Forest Management, Yale University, was elected President of the Society of American Foresters for a two year term beginning January 1, 1934, it was announced at the headquarters of the Society on December 15 when count of the referendum ballot was concluded. Earle H. Clapp, assistant forester in charge of Research, United States Forest Service, was elected Vice-President. New members of the Council elected were Samuel N. Spring, dean of the New York State College of Forestry; F. W. Besley, state forester of Maryland; Emanuel Fritz, University of California; and Ward Shepard of the Indian Forest Service. Other members of the Council whose terms carry over are: Austin F. Hawes, state forester of Connecticut; C. F. Korstian, of Duke University; E. L. Demmon, director of the Southern Forest Experiment Station; Hugo Winkenwerder, dean of the Forestry Department, University of Washington; and C. M. Granger of the United States Forest Service.

President Aids Boy Scouts in Nut Tree Conservation

On the eve of the announcement by officials at Boy Scout headquarters in New York that one week will be set aside as Nut Tree Planting Week, President Roosevelt invited Boy Scouts to go nutting at the Hyde Park estate in order to obtain seeds.

In a letter addressed to G. H. Collingwood, forester of The American Forestry Association, who acts as secretary-treasurer of the National Nut Tree Planting Committee, the President wrote, "I should be delighted to have Boy Scouts gather nut seeds at Hyde Park. I think there are very few walnuts, but there are butternuts and hickory nuts. If you will get in touch with the Superintendent of my mother's place at Hyde Park, Mr. William Plog, I am sure that arrangements can be made for having nuts gathered." Walter C. Forse, Scout Executive of Poughkeepsie, will lead the Scouts on the nutting hike to the President's home.

It was upon the recommendation of John M. Phillips, forestry committee chairman of the Pittsburg Chamber of Commerce, and member of the Allegheny Boy Scout Council, that a week has been set aside for the furthering of the nut tree planting program. The selection of the period dedicated to nut tree conservation will be left to local committees in order that favorable climatic conditions will prevail. Seeds will be gathered in the fall.

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by

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READING HISTORY FROM THE DIARY OF THE TREES

(*Continued from page* 14)

bers falling within the years embraced in this calendar could, therefore, be dated to the year. At least, the year of cutting, determined by the outer ring on a perfect beam, accurately established the time when that particular specimen was utilized in the construction or repair of the building from which it came. Naturally, other elements entered into such a determination, which had to be checked against other wood found in the same ruin. A beam cut ten years before for one pueblo, for instance, might have been moved for use in another when the first was abandoned, as often happened.

But there were still other, more ancient looking rafters that simply refused to fit into the general picture. These came mostly from sites considered by archaeologists to be very old, and their rings in no way coincided with any of those which had already been arranged into an undeviating sequence of years. It was found, however, that in many cases the layers of these specimens corresponded with each other, where the later years of one overlapped the earlier years of another. Thus a second chronology was obtained that went back to an evidently remote period. Between the two was a large and vastly significant gap, an unknown space of time that must be bridged if certain important ruins were to be given their proper niche in history.

In order to date pueblos that were abandoned before the arrival of the white men in America, it was necessary to find samples of much older wood whose later years would merge with the earliest already obtained from the living trees and the few old beams that had been added to the calendar. Here and there in newly found or almost forgotten sites a few such beams were found. Many were cut from the roof material of pueblos which had not only existed at the time of the conquistadores or before, but were still being inhabited by the descendants of the tribe.

Several different chronologies were worked out, between all of which remained gaps of indeterminable length. To facilitate the process of dovetailing similar rings together, graph charts of the completed chronologies, as well as of each datable beam, were made. The most significant years, such as those of drouth, were indicated by lines of varying length, whereas the fatter years of plentiful rains were omitted entirely. It has been remarked that the fidelity with which the drouth rings of different trees corroborate each other on climatic conditions would delight a trial attorney's soul. And as the business of finding and matching beams continued, step by step historical dates were pushed back, until at last an ancient timber was taken from the still-inhabited pueblo of Oraibi that carried the calendar to 1260 A. D., less than fifty years after the famous Children's Crusade.

Progress was none too fast, though, for other beams kept turning up that jumped the centuries to a time that was yet vague and shadowy. Several smaller chronologies of about a hundred years each were obtained from such ruins as Wupatki and Citadel near Flagstaff, Mummy Cave in Canyon del Muerto, and Mesa Verde in southwestern Colorado. Then, on rechecking the rings, it was suddenly discovered that the wood from these sites joined into a continuous space of 180 years, which demonstrated that the prehistoric settlements of Citadel, Fewkes' Ruin J, Wupatki, Mesa Verde, Mummy Cave, Betatakin, Keet Seel, and several others all belonged to the same general period. But between these and massive Pueblo Bonito there was a gap which, though believed to be short, was quite troublesome.

After much wrestling with the problem, the records of the trees were once again checked and compared with the latest rings from Pueblo Bonito. This time they matched, the apparently unbridgable gap was spanned, and in addition to the modern chronology that went back to 1260 A. D., there was a continuous and unbroken prehistoric sequence of 580 years. In an effort to stimulate the search for some very old trees whose rings might link this prehistoric chronology with the later one, Dr. Douglass himself offered a reward for any pine 600 years old.

Part of a 640-year-old pine was already in the scientist's possession, but as it apparently had a serious injury near the center it was regarded as useless. Subsequently it was discovered that this curious disfiguration was the result of the long drought of 1276 to 1299. Several attempts were made to match the prehistoric pine sequence with the very hoary giant sequoias of California, but as there was no marked point of correspondence between the respective rings, and as the sequoias register seasonal fluctuations in an entirely different manner, results were unobtained.

In the intensive search for a beam that would bridge the tantalizing gap between the prehistoric and modern chronologies that now made up the tree ring calendar, all the known ruins that had existed from historic times back to the pre-Columbian era were investigated. The distinguishing character of the older beams sought was an end revealing the marks of the curious smashing cuts of a stone ax. Small chips knocked off by these primitive tools showed whether the rings had the strong, definite markings of pine, the weak and indistinguishable ones of cottonwood, or the narrow errratic ones of juniper.

Pottery finally provided a clue to the region in which the missing beam might be found. Hopi ceramics were traced back to their earliest types of polychrome and black-on-white decorative motifs from the beautiful yellow ware manufactured somewhat previous to historic times. Sites abundant in sherds, or fragments, of this older ware were sought out and investigated for possible beam material of great antiquity.

At a ruin called Showlow, some fifty miles south of Holbrook, was found the most notable discovery in the history of American archaeology, the missing link that joined together the two chronologies into an unbroken span of over twelve centuries! Found in a horizontal position, this tremendously significant piece of wood seemed at first glance to be the fragment of a round beam burnt off at the end in conical form. To preserve it until it could be conveyed safely to a suitable place for study, it was bound carefully with twine, but even so it fell apart. Then it was seen that what was thought to be a section of solid log was in reality but the outer shell of the ancient timber reduced to charcoal and near charcoal.

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Nevertheless, its value seemed exceptional and it was given the designation HH39. Dr. Douglass examined it in an old tool house near the pueblo ruin, and it was quickly recognized that its outer parts belonged to the 14th century, the rings being traced to approximately 1380 A. D. Following them inward it was seen that, whereas the Oraibi beam went back no farther than 1260, HH39 preserved a record of history even deeper into the past. The year 1258 was a hard one of little rainfall, as recorded by the thin ring, and the even narrower one of 1254 revealed an even leaner one in the tree's vanished but not forgotten life. 1251 and 1247 were dry years. The ring at the very heart of this epochal timber disclosed the fact that it began its long career in the year 1237 A. D., only a decade after the Sixth Crusade started for the Holy Land.

The mere history embodied in that charred fragment of wood alone held the scientists spellbound. But they did not long delay in finding out if this ancient beam would bridge that intervening space between the two chronologies. By referring to the skeleton charts, or graphs, of the rings heretofore arranged in sequence, and comparing them with one newly obtained from HH39, the tree ring calendar was at last completed. To the awed delight of everyone concerned, scientists, students, and laymen, it was evident that a great new page had been inscribed in history, a page that lifted Southwestern archaeology to the classical plane of Old World archaeology. And in many ways it surpassed the science in the Old World, for where many of the Sumerian, Chaldean, and Hittite ruins could be placed only approximately in time, these apparently insignificant mud-and-stone dwellings of a race that had no written language and inhabited the most arid portions of America could be dated exactly to the year.

It was learned, after the study of beam HH39, that in the prehistoric chronology the ring representing its 551st year corresponded identically with that of the year 1251 in the newly discovered linking specimen from Showlow. This proved that the Oraibi beam had been only nine years short of closing the gap. The two chronologies, now conjoined, covered an overlapping period, and to the surprise of the scientists it was found that there were actually later years in the older chronology that overlapped the year 1260 of the Oraibi beam.

The older of the two chronologies existing before the discovery at Showlow was found, by the simple procedure of counting back, to have commenced at 700 A. D. This was the date of the innermost ring of the earliest timber taken from Pueblo Bonito, which was decided to have reached its golden age in 1067 and to have been yet in existence in 1127. By 1600, however, it was not only deserted but in ruins. Since the completion of Dr. Douglass' calendar many older beams have been found in ruins dated at that time which carry their contemporaneity still farther back. At the present time the earliest date of which archaeologists are absolutely certain in any prehistoric pueblo ruin is close to the year 800.

Immediately upon perfecting the new tree ring calendar, the next step was to date every Indian pueblo from which samples of datable wood had been recovered. Further study revealed that beam HH39 had not only connected the two year sequences but also overlapped the old chronology by forty-nine years in its inner rings, while its outer ones corresponded with 120 years of the later chronology. The use of the talkative tree rings has provided dates for the following better known pueblos and cliff dwellings:

Pueblo Bonito, 919-1130; Mummy Cave, 1253-1284; Aztec, 1110-1121; Mesa Verde, 1073-1262; Keet Seel, 1274-1284; Betatakin, 1260-1277; Oraibi (claimed to be the oldest continuously inhabited village in North America), 1370-1800; Kintiel, 1275-1285; Kawaiku, 1284-1495; Walpi, 1427-1605; Citadel, 1192-1260; Wupatki, 1087-1197; Showlow, 1174-1383; and White House Ruin, 1060-1275.

There are numerous great ruins to be found in the associated cultures and sub-cultures comprising the Puebloan development that to date cannot be assigned a place in this chronology because of the fact that the wood found in them is not one of the three translatable species. Among these are the *caliche* compounds of the Red-on-buff culture, built ages ago by the Ho-ho-kam, or "Vanished People," who formerly inhabited the lower and middle Gila drainages in southern Arizona. No datable wood has been found in any of the unique pueblo ruins of the Mimbres Valley in southwestern New Mexico, where the finest pottery of the prehistoric Southwest is to be excavated. But research is going steadily ahead and it is far from improbable that in the near future science will have evolved a method of reading the records contained in the woods of other species resting under the fallen walls of the first Americans. The addition of pinon and cedar to the series of datable wood will help to determine the chronological place of these cultures.

When this is made possible there are many details that will provide much more data of value than can be realized today. A warped old bow or its arrows, taken from some grave centuries old, will furnish not only a date for the settlement in which it is found but also for the individual with whom it is interred. The same application will extend to atl-atls, the carved wooden shafts used by the Basket Makers, predecessors of the Pueblo ans. And pottery excavated in close proximity to datable wood will, when intensive study has been made, yield a method for dating contemporaneous sites where no specimens of wood are obtainable.

So far has the value of tree rings increased in importance in American archaeological research, that it has become an integral part of all present-day excavations. Most of the larger museums interested in Southwestern archaeology and anthropology have established their own tree ring departments, where all beam material brought in by their field expeditions is recorded, transferred to graphs, and stored.

Among the institutions which have added tree ring departments to their regular divisions of the science are the Museum of New Mexico associated with the School of American Research, at Santa Fé; the Laboratory of Anthropology, also at Santa Fé; the University of Arizona, at Tucson; the Museum of Northern Arizona, at Flagstaff; Gila Pueblo, at Globe; and several of the larger colleges and museums in the East.

CORRECTION

In the December issue of AMERICAN FORESTS, John D. Guthrie, author of *With the Texas Forest Army*, was presented in the "Who's Who" column as being a native of Massachusetts, a graduate of the Massachusetts Institute of Technology, and a civil engineer connected with New York City. This is erroneous and the Editors regret the mistake.

Mr. Guthrie was born at Charlotte Courthouse, Virginia, and received the degree of Ph. B. from Union College in 1902. In 1906 he was graduated from the Yale Forest School. He first became associated with the United States Forest Service in 1902, and in subsequent years became forest supervisor and assistant regional forester, in charge of Public Relations, with headquarters at Portland, Oregon. With the creation of the Civilian Conservation Corps, he was assigned to Fort Sam Houston, San Antonio, Texas, as Forestry Liaison Representative of the Eighth Corps Area.

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1933 INDEX

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Requests which we have on hand at the present time will be filled immediately upon publication of the Index.

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LAND PROBLEM IN FLORIDA

(*Continued from page* 27)

nourishing forage. For several months in the spring the natural supply of grass is good; then it begins to become thin and dry. In the late fall and winter months livestock must either be fed expensive feed, or suffer a great reduction in weight, which lessens its value. Under changed conditions, and with planted grass, livestock might be raised more successfully in Florida and it is possible that the industry may show a substantial development in the future, but even so, the present acreage used would have to be multiplied many times before it would constitute an important part of the State's total acreage.

The point I wish to bring out is that agriculture is not increasing its use of land in Florida, and from present indications, will not increase it appreciably for a long time in the future. Even if the land used for agriculture were to double in area, it would then amount to only twenty per cent of State's area, which would still leave eighty per cent not required by agriculture. For many years to come, therefore, from eighty to ninety per cent of the land in Florida must be used for some purpose other than agriculture. In my opinion, most of it will either be unused, or be utilized for forestry.

There are at present more than 11,000,000 acres, or approximately one-third of the land in the State, tax delinquent. This is mostly cut-over timber land, on which the owners could not pay the present high taxes. A law providing for a low *ad valorem* rate not to exceed five cents an acre, plus a severance tax of not more than ten per cent on the timber when it is cut, would provide relief for such landowners, and offer some inducement for future timber growth. The state of Florida should reforest the tax delinquent cut-over timber land which it holds, and protect it against fire. Then, with a revision of the tax laws, purchasers for the land might readily be found.

The timber produced in Florida could be used for four primary purposes: lumber, naval stores, paper, and furniture. The lumber industry is an old established industry in the State and should become prosperous again, with a revival in building construction, which appears inevitable when prosperous times return. The naval stores industry is likewise well-established and has an excellent future, due to the constantly increasing uses of turpentine and rosin in chemical and allied fields. Paper manufacturing has great possibilities because of the rapidity with which forests can be grown in the Florida climate. In fact, engineers say that conditions are more favorable for paper production in Florida than in any other state in our country. The production of furniture might likwise become a major industry in the State as conditions are very favorable for it. There are other minor uses for timber, and the products of the forests. Periodical planting and selective cutting for varied uses would insure a continuous income from timber land.

It is my firm conviction that with scientific reforestation and wise use of timber, profitable forest industries can be established and maintained in Florida, which will utilize our great land area, and provide a large and constant revenue for our citizens for many generations to come. I believe it is evident that the major portion of the land in Florida cannot be profitably used for anything except timber production. Therefore, I return to my original statement, which is that the prosperity of Florida will ultimately depend upon forestry, and the sooner the inhabitants of the State realize this, and make sensible and far-sighted provisions for it, the sooner prosperity will be attained.

THE PRESIDENT'S FORESTS

(*Continued from page* 9)

before whom he laid the plan puckered their brows. They had examined the drainage ditch and found old tamarack roots sticking out on the sides, buried by humus or forest litter. In fact the entire surface of the ground has been covered by this blanket of decomposing vegetable matter. It is almost comparable to the peat bogs of Ireland. The question in the foresters' minds was whether or not young trees planted in a layer of humus one to two feet thick, and not in the soil, would survive. The success of such plantings seemed very questionable. Nevertheless Mr. Roosevelt characteristically went ahead. The swamp was cleared in 1931-32 and a number of different species transplanted. Two growing seasons have indicated a decidedly successful experiment. Northern white cedar is growing nicely. European and Japanese larch show promise. Norway spruce and white pine also are succeeding under these formerly untried conditions. Perhaps the old "Tamarack Swamp" will again yield a timber crop and one composed of valuable species.

Across the swamp and another planted field and the visitor is again on the concrete highway. Across this highway are other plantings, mostly demonstrational, but two small areas attract attention. One is an underplanting of red pine under grey birch. The other is an experiment in direct seeding with stratified red oak acorns. The time has been too short to read results but the plots show promise.

The demonstration plantings are particularly interesting because of the mixture of species used. The mixtures are not haphazard but are planned with an eye to furnishing intermediate cash returns from the sale of thinnings for such uses as grape and fruit stakes for fruit growers on the opposite side of the Hudson, or as material for crates and boxes used in marketing fruit. The President's own statement best portrays his outlook on forestry as a private enterprise on his farm:

"Forest operations on a farm of this sort can and should be made to meet the entire tax burden levied against the property."

THE GRIFFITH PARK DISASTER

(*Continued from page* 15)

they would have had a cleared avenue of escape, had not one group become panic-stricken and lighted a backfire at the foot of a narrow draw at the bottom of a steep slope. The result was inevitable. The fire leaped from a tiny flame into conflagration.

Converging with the main fire, it produced a whirlwind that threw sparks and brands high into the air to drop ahead of the oncoming flames, setting ablaze the heavy brush in which one hundred men were working.

With fire all about them, the men ran blindly. Some ran down into the canyon. Most of these escaped. Others rushed wildly up the steep slope, and many escaped with burns of varying intensity. Others, twenty-six in number, were overcome and fell—some almost at the top of the slope beyond which was safety—and rapidly became charred objects scarcely recognizable as human beings.

The holocaust was past in the space of a few minutes. The fire burned to the top of the ridge and was controlled by crews working under the experienced supervision of the Los Angeles City Fire Department.

The Coroner's Jury that sat to determine the cause of the deaths stated that in its opinion the fire that resulted so disastrously was caused by a match or cigarette dropped by a careless smoker—a terrible indictment of the thoughtless and careless use of fire in the wooded and forested areas.

"PATRIOTISM OF PEACE"

(*Continued from page 6*)

they may fend off subjection. But who can be sure, James asks, that other aspects of one's country may not, with time and education and suggestion enough, come to be regarded with similarly effective feelings of pride and shame? Why should not men some day feel that it is worth a blood-tax to belong to a collectivity superior in every ideal respect? Why should they not blush with indignant shame if the community that owns them is vile in any way whatsoever?

The Civilian Conservation Corps is a national service agency available for the development of natural resources affected with a national public interest. Its work could be co-ordinated and directed to serve permanently the Nation's welfare in the most purposeful and productive way, if, as suggested, a series of inter-related and integral national land utilization projects are classified and established. The man-power of the Corps would be allocated to these natural economic and social entities or "Conservancies" and where in the public interest it is desirable to undertake integral measures of conservation, reclamation, improvement and rehabilitation. This would, following the principles so successfully worked out in Italy, permit unity of conception and unity of execution in the purpose to be served, i. e., the complete development and utilization of the potential natural resources. Thus there would be, and merely for example, an "Upper Mississippi Conservancy," a "Coastal Plain Conservancy," a "Colorado River Conservancy." The C.C.C. under such a concept of organization affords a signal opportunity to weld together the common objectives of the various conservation agencies, Federal and State, and to a definitive purpose; an effective mechanism making possible for the first time an integral and concerted attack against the unremitting and destructive forces of nature.

The "supreme theatre of human strenuousness" need not be held closed awaiting the echo of another shot at Sarevejo. Let the young men be recruited and mobilized for constructive national offense, to do the pioneer labor of building a new civilization within their own "Conservancies," their own Tennessee Valleys, and in which they will ultimately live as responsible and independent citizens. Within the framework of their extensive pioneer construction will follow the intensive complementary development of regional and community planning, a mosaic of national planning, to meet the material needs and spiritual wants denied in an era of exploitation.

Give these young men of the Civilian Conservation Corps a touch of glamour and color in their work, some equivalent for the martial spirit to take them out of themselves. They have surrendered private interest and their task is not to be measured by the contractor's yardstick. They will, if there is sufficient imagination, vision and sympathy to give them guidance and opportunity, build a collectivity superior in every respect.

Preparedness for living is national defense. This is the patriotism of peace. Here is a challenge and an historic opportunity for opinion-making men.

Berry Heads Central States Forestry Congress

Major George L. Berry, of Pressman's Home, Tennessee, has been named president of the Central States Forestry Congress, and Knoxville, Tennessee, has been chosen for the 1934 meeting of the Congress. James O. Hazard, state forester of Tennessee, was named secretary-treasurer.

Major Berry is president of the International Printing Pressman and Assistants' Union, a member of the Labor Advisory Board of the National Recovery Administration, a member of the State Parks and Forestry Commission, and a member of the Federal Advisory Council and Permanent Committee dealing with the cotton textile industry.

Kelleter Resigns as Director of Wisconsin Conservation Commission

The resignation of Paul D. Kelleter as director of the Wisconsin Conservation Commission has been announced. At the time of going to press his successor had not been named.

Mr. Kelleter was appointed director of the Commission early in 1930, resigning as administrative assistant of the Federal Farm Board to accept the appointment. He succeeded L. B. Nagler who resigned in 1929.

Mr. Kelleter served for five years as director of forest extension at the New York State College of Forestry at Syracuse University. Previous to that he was in the office of the Secretary of Agriculture.

Classified Ads

Advertisements from reputable individuals and concerns will be inserted under this head at the rate of 10c a word per insertion, cash with order. Display rates on application. No advertisement will be inserted for less than $1.00. Abbreviations, initials and letters will be counted as words. Name and address must be given, as advertisements will not be inserted in this section with only a box number. Address all orders to Classified Advertising Department, AMERICAN FORESTS Magazine, 1713 K Street, N. W., Washington, D. C.

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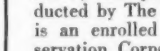
Index to

ADVERTISERS

JANUARY, 1934

	PAGE
American Pad & Textile Co.	41
American Tel. & Tel. Co.	2nd Cover
Atlas Powder Co.	33
Austin-Western Road Machinery Company, The	4th Cover
Bartlett Manufacturing Co.	44
Bass Camera Company	47
Bush, J. M.	47
Fechheimer Bros. Company, The	42
Franklin Forestry Company	45
Happy Days Publishing Co.	38
Harrison Smith and Robert Haas, Inc.	43
Herbst Brothers, Inc.	33
Idaho School of Forestry	46
Jonas Bros.	47
Keene Forestry Associates	45
Kelsey Nursery Service, F. W.	45
Lincoln Hotel	37
Long Bell Lumber Company, The	44
Maine School of Forestry	44
Morrison Hotel	39
N. Y. State College of Forestry	46
Northland Ski Mfg. Co.	41
Papier Mache Specialties Co.	41
Plumb, Inc., Fayette R.	35
Porter, Inc., H. K.	39
Ransom Nursery	47
Schoepfer, G.	47
Smith & Company, D. B.	37
Victor Tool Company, The	42
Weaver, W. W.	41
Western Maine Forest Nursery	45
Western Maine Forest Nursery	41



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AMERICAN FORESTS Magazine

"WHO'S WHO"

AMONG THE AUTHORS IN THIS ISSUE

Arthur C. Ringland

ARTHUR C. RINGLAND (*The Patriotism of Peace*) was until recently European Forestry Representative of the United States Forest Service, with headquarters at Berlin. In this office he kept in touch with European forestry developments as they affected the national forestry policy of the United States. He graduated from the Yale Forest School in 1905 and has made a distinguished record in his profession. He is now serving as Forestry Liaison Representative, Fourth Corps Area, in the Emergency Conservation Work, with headquarters at Fort McPherson, Georgia.

RAY F. BOWER (*The President's Forest*) is associated with the New York State College of Forestry, at Syracuse University, where he is an instructor in Forest Extension. During the seasons of 1932 and 1933 he supervised the planting of trees on President Roosevelt's Hyde Park estate. Born in Shiawassee County, Michigan, and receiving a B. S. degree in Forestry at Michigan State College, Lansing, he joined the staff of the Central States Forest Experiment Station, Columbus, Ohio, as field and office assistant in 1927. In 1929 he became assistant forester of the Ohio Agricultural Experiment Station, at Wooster, resigning in 1931 to go to Syracuse.

BRUCE BRYAN (*Reading History from the Diary of the Trees*) calls himself at the present time "just a free lance writer." However, he has been field archaeologist for the Los Angeles Museum and Southwest Museum, has made an archaeological exploration of St. Nicholas Island, off the coast of California, and has "done a lot of excavating in Arizona, New Mexico, and California." He is a native of Washington, D. C., where he now makes his headquarters.

GEORGE H. CECIL (*The Griffith Park Disaster*) is executive secretary of the Conservation Association of Los Angeles County, California.

ALFRED M. BAILEY (*Photographing the Western Horned Owl*) is director of the Chicago Academy of Science. A naturalist and photographer of note, he has ranged from the Hawaiian Islands to the land beyond the Arctic. R. J. Neidrach is associated with Mr. Bailey.

JAMES KIDWELL (*A Task, A Plan, and Freedom—"What the C. C. C. Has Done For Me"*), first prize winner in the contest conducted by The American Forestry Association, is an enrolled member of the Civilian Conservation Corps, assigned to Camp E-57, Indiana. He is a Texan and, according to his word, "survived the rigors of the climate and acquired at various times a high school and college education . . . . I don't know whether I was born with the wanderlust, had it thrust upon me, or acquired it," he writes. "Anyhow, I fell heir to it at an early age. I have worked at various trades in various places, but none of them very interesting to read about."

GERALD STREET (*Wisdom From the Trees—"What the C. C. C. Has Done For Me"*), second prize winner in the contest conducted by The American Forestry Association, is an enrolled member of the Civilian Conservation Corps, attached to Camp F-45, Santa Fe, New Mexico. Born in Abilene, Texas, the son of a then well-to-do rancher, he attended Abilene High School and, for one year, McMurray College, before he was "compelled to go to work.

"The C. C. C. has made me think more of America," he writes, "worship our grand old President, and to have hope in our future. But it cannot teach me to drive one of our trucks, even under the diligent supervision of our beloved officers." His ambition is to become a successful writer of fiction, he says, and good books, as Balzac, Dickens, and deMaupassant are his companions. He likes motion pictures, too.

K. EDD TESTON (*A Home and Harvest Saved—"What the C. C. C. Has Done For Me"*), third prize winner in the contest conducted by The American Forestry Association, was formerly an enrolled member of the Civilian Conservation Corps, attached to Camp F-19 N, New Mexico. At the expiration of the first six months' period he did not re-enroll, but returned to his home at Bluit, New Mexico, with the hope of working his way through college. "I completed high school at Ralls, Texas," he writes, "but because of the depression was unable to attend college. Now I am twenty-one, over six feet in height, and weigh one hundred and eighty pounds. If expectations come true, I will be holding down the fullback position on the team at Texas Technical College in a year or two."

A. STUART CAMPBELL (*The Land Problem in Florida*) is associate professor of Economics and director of the Bureau of Economic and Business Research at the University of Florida, at Gainesville. A native of Lynchburg, Virginia, he attended the public schools of that city until his enlistment, at the age of eighteen, in the United States Army during the World War. Upon his return from France, he attended the Wharton School, University of Pennsylvania, where he received a Ph. D. degree. Following that he was a professor at the University of Virginia and at Emory and Henry College.

JOHN HARVEY FURBAY (*Field and Forest for Boys and Girls*), who presents in this issue his initial story in a series to be conducted monthly in AMERICAN FORESTS, is professor of Biology and Director of Nature Education, at the College of Emporia, Kansas. He is also well known as a lecturer and nature guide, and is director of mastodon excavations in Indiana. He is a native of Ohio, and was educated at Otterbein College, Ashbury College, Ohio State University, the University of Paris, New York University, where he received an M. S. degree, and Yale University, a Ph.D. degree. He reports that his hobby is the making of scientific motion pictures. He is the author of *Nature Chats, A Year Out-of-Doors*, and other publications.

G. H. COLLINGWOOD (*Forestry in Congress*) is Forester for The American Forestry Association.

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Member A. B. C.

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